257-259
260-261
262-264
265-267
267
268-270
271
272
273
273
273
274
274
275
276-281
282-284
285
286
287
288-289
290-291
291
292-293
293
294

Gleanings in Bee Culture

June, 1946 Vol. 74, No. 6

Swarm Control in Large Hives

By Chas. S. Hofmann

While the Principles of Swarm Control do not Change, the Hive Manipulations May Vary.

Swarming has many causes. If one attempted to list them in the order of their importance, he would surely be open to argument. There is, however, one phase of the problem that bears mentioning. Nearly all of the causes of swarming are within the control of the beekeeper. The weather is the major exception. The fact that swarming will vary such a great deal in the same locality from year to year indicates beyond a doubt that the weather man has a powerful influence on this problem as well as on all other phases of beekeeping. Another factor is the inherent instinct in the bees themselves. Swarming is such a natural impulse among bees that sometimes it is difficult to explain swarms by the usual reasons. Sometimes we have to just say—pure instinct. No one can do anything about the weather and the average beekeeper can do little about improving strains of bees. This is up to our queen breeders and research men.

Chas. S. Hofmann

Some of the causes of swarming that the beekeeper can control are: falling queens, congested brood nests, lack of super room, improper use of queen excluders, use of foundation or white combs early in the season when dark combs are needed, lack of ventilation during hot weather, poor brood combs, etc. The almost endless combination of causes results in a great many ideas and approaches to the problem.

I believe any series of manipulations intended to control swarming should meet certain requirements. First of all, the method employed must not require any serious disar-

Subscription Price—1 year, $1.50; 2 years, $2.25; 3 years, $3.00. Foreign, 25c additional. Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

B & Z Library

rangement of the hive that will stop or even slow up brood rearing or will result in any other shock or lost motion to the colony. In attempting to eliminate swarming one must be careful not to also eliminate a good share of the crop. Secondly, it must not be necessary to visit any colony oftener than once a week. Beekeepers with out-apiaries are usually lucky to get around to their yards that often. Thirdly, the method must be flexible enough to permit individual colony attention but still lend itself to the routine of commercial beekeeping.

We winter in cellars here and because the hive we use is large (a little larger than the Modified-Dadant) we also winter in single stories. These single deep bodies have always seemed sufficient to house a large cluster of bees with enough honey and pollen to last through winter and well into the spring. Whenever about 20 percent of the colonies in the yard are beginning to be strong enough to warrant room, the whole yard is supered with deep bodies containing dark combs and combs of honey for feed whenever they are needed. These second brood chambers are placed underneath. There are several advantages in this. It is all right to put room on top if the weather is warm enough and the bees strong enough to move right into it, but this is not usually the case when this first room is put on and bees will make use of feed combs when placed underneath much more readily than when on top. Also all colonies, except a few odd "cripples", can be given room at the same time. It leaves the brood and bees at the top where the heat of the colony is conserved regardless of the weather that comes after the super is put on This helps all colonies and especially protects the clusters that are not quite as strong as they should be. It acts as a safety valve for the strongest colony as the clusters can bulge down into the lower story and many queens will move down for limited brood rearing, especially if some of the combs contain honey. It simplifies to a great extent the feeding of pollen cakes as they, of course, have to be placed directly over the main cluster and in this case all that is necessary is to remove the inner cover. Somewhat the same thing is true if sugar syrup is fed. There is one other advantage—if more dark honey is gathered in the spring than the bees use up before the main flow begins, most of it will go up into the main brood chamber and consequently be kept out of the extracted honey.

As soon as the dandelion flow is over or the strongest colonies are getting a little uneasy (whichever comes first), all colonies are reversed. The entrance contractors are usually removed at this time also. From here on until the main flow all that is necessary for the average colony is to see that it has plenty of honey and pollen avail-

Home yard—honey ready to take off—escapes under the top bodies

able. We haven't had any AFB in our bees for the past five years but we still inspect every colony in the spring and at the same time the work of each queen is carefully scrutinized and any one not fully up to par is marked for requeening or at least another check later on. Queens are never judged by looks or by age but entirely by performance. Sometimes fine looking queens are incapable of heading a good colony. Queens are clipped when they are seen but no special effort is made to find them.

Queens ordered in advance from the South begin coming about the middle of May, and these are used for early requeening and the making up of nuclei for a queen reservoir for use later on.

As soon as the main flow begins a shallow super of white combs is placed on top. On the next visit a week later if there is any weight in the first super another one is put on **underneath** the first one. (Every shallow super added is always put directly over the two brood chambers.) The queens do not go into these supers. We have never had more than 2 percent or 3 percent at the most. Bees are supered lavishly until the flow is about half over. The idea is to have all the honey go up into the supers and prevent congestion from honey storage around the brood area. The queen will then have plenty of room to lay and most of her brood will be in the top brood chamber. When the flow is about half over the queens are put down. This is done by setting off whatever shallow supers are on the hive, then taking three combs out of the top deep body. The other combs are spaced and a quick look taken for the queen. If she is not seen, the combs are shaken in the hive with the addition of some smoke. The deep body is then set off and a queen excluder placed directly over the brood chamber. A new shallow is now placed on the excluder (if the colony needs one) and the other shallows placed on top of that one. The deep body is put on last at the top of the hive and the three frames leaned out are shaken off and put beck in place.

This procedure has a very marked effect on swarming. The deep body being full of brood in all stages draws young bees in large numbers

Scale hives and adjoining colony at the end of the flow. These hives are big and hold a lot more honey per vertical foot.

from the lower part of the hive. The queen is back in her old brood chamber which usually has only enough brood for bait. It has been said many times that queen excluders are honey excluders, and no doubt they can be if not used properly, but in this case I cannot see that they have any effect on the crop. We devised this method while experimenting to see if there was some way of getting more honey into the brood nests as the fall flow here is usually pretty light. It was a failure from that angle as the honey all goes to the top of the hive and fills the deep body on top as fast as the brood emerges. The shallow super directly over the excluder is the last to be filled. The bees, however, leave nearly all the pollen in the brood nest which is a very desirable thing for winter. On the next round the deep bodies are checked to see if any queens were left up (usually 2 percent to 4 percent) and to destroy any possible emergency cells. The rest of the hive is not examined unless a large number of emergency cells are found above to indicate the possibility of swarming cells below.

From the time the honey flow begins until the queens are put down, colonies are checked for swarming by setting off whatever shallow su-

pers there are on the hive and tipping up the top deep body and looking for queen cells near the bottom bars. If cells are found an investigation is made. If the general condition of the colony is good and the queen is still laying near normal, the cells are destroyed and the colony given another chance. If there are more cells found on the next round a week later (especially if the cells are beyond the egg stage), the queen is killed and the eggs destroyed. We have never made much attempt to differentiate between supersedure swarming and so-called natural swarming.

It's all swarming any way you look at it, the queen usually getting the blame anyway. A week later the emergency cells are destroyed and a new queen is introduced. This will invariably stop swarming for the balance of the season and put the colony's morale back to par. These queens are introduced by taking out of a nucleus two combs of brood and bees (with the queen between the combs) and placing them in the center of the top deep body, two combs having been taken out to make the necessary room. This is easy to do and works very well, the percentage of acceptance usually being higher than when introducing queens in cages. Just be sure the queen is between the two combs when they are put into the hive. It helps to first shake or spray sugar syrup over the top of the colony to immobilize the bees. If a nucleus is not available, a queen can be simply introduced but more time is lost when this is done. It seems that the only colony that will produce a maximum crop is one in which there has **been continuous brood rearing.** Any interruption in brood rearing, however it may come about, means at least some loss in the crop even though the interruption is at such time that the brood reared will never mature in time for those bees to gather any nectar.

Swarming seems to be influenced to quite an extent by the proportion of young bees to old bees. If a colony is "boosted" with several frames of brood it will usually not be as apt to swarm as another colony of the same original strength that was not boosted. Introducing queens by the nucleus method has the advantage of adding some brood to a hive in addition to a laying queen which is more readily accepted than a queen that has just arrived in the mail.

Up until now you have probably been wondering who lifts the heavy supers. And they are heavy—at least we try our darndest to get them that way. An attempt is made to keep lifting at a minimum, however. When the queens are put down the deep bodies contain mostly brood and so are easy to handle and at that time there is ample room in the hive to receive the estimated balance of the crop. After that it is necessary to tear down only a limited number of hives. When a yard is worked, a careful check of entrances is made and a few suspicious colonies are examined. If they are coming along as they should, no more are looked at; but if they need attention then a few more are examined for a further check. When a colony has to be examined it is a simple task for two men with a hand lifter. Some honey is taken off with escapes but most of it is removed with acid and from the time it is loaded on the truck it is all handled with a lift truck. Some "solo" work has been necessary during the war period but that should be about over now. Perhaps two shallow supers of dark combs could be used for the first room in place of the deep body. We intend to get a partial answer to that this summer.

An added advantage of this system is that when the honey flow is over the entire crop is above excluders and ready to be taken off. Harvesting the crop is strictly a routine job.

Janesville, Minn.

Worth Reading

Browsing through the March issue of the little magazine called "The Home Garden", I was delighted to find that Esther Grayson has this time devoted her entire cookery article to nature's finest sweet, heading her column "Honey to the Rescue". She says some mighty nice things about honey, gives some pertinent facts, rules and precautions, then goes on to give a number of taste ticklers, winding up with a reference to canning with honey. I hope you can read (and use) it too.—Mrs. Benj. Nielsen.

Clethra Alnifolia

The Honey is of Fine Quality

By Milton H. Stricker

Recently in a talk before a group of Jersey beekeepers I mentioned that New Jersey's most choice honey is produced from Clethra. When asked what the plant was, I replied, "Clethra alnifolia". A gentleman in the front row promptly stated that they didn't want any "high falutin' latin name". I countered with the common name used in my section of the state, August flower.

My audience was still unresponsive so I began to elaborate that it was a bush growing in most cases in wet soils, preferably in swamps and bogs where the soil is acid and underlaid with "hardpan". The plant often reaches a height of eight feet yet its woody stems seldom grow more than one half inch in diameter. The flowers in our county begin about August first with a single flowerlet coming from each end born laterally on the ends of the "fruiting" wood. The flower clusters are from three to seven inches in length and contain from 30 to 90 blossoms, blooming first at the bottom of the cluster and progressing onward up the stem. It is not uncommon to see seed set on the lower end of the cluster, full bloom in the center, and tight flower ends at the top of the stem, all at the same time. Because of this slow blooming of the individual flowerlets and the stretched out blooming of individual plants, the woods will reek with a fragrance akin to lilacs.

My audience began to awaken and just as Clethra blooms deliberately, realization began to blossom.

"Oh, you mean wild lilac?"

"Yes, summer lilac."

"We call that sweet pepper bush."

"July flower," came from still another person who lived in the extreme southern end of the state where all plants are two weeks ahead of our section.

A North Jersey apiculturist spoke up, "We call that leather leaf!"

It was then I realized how confusing were common names of plants, as people in the southern part of the state call the Cassandra (Chamaedaphne calyculata) "leather leaf".

I went on describing the plant, mentioning that if the leaves or blossoms were rubbed briskly on one's wet hands a lather comparable to soap resulted. Legend has it that Indian tribes of long ago used the plant in this manner. This brought a flood of common names all from different beekeepers: Indian soap, soap bush or soap brush, suds bush, lather leaf, ladder leaf.

Clethra Alnifolia

For my next talk I determined to be prepared with all these common names for this plant since I had acquired all the common names—I thought. Thirteen common names and imagine my surprise upon consulting "American Honey Plants" and finding Mr. Pellett uses white alder is a common name for Clethra.

Since I was scheduled for another talk and felt as though I wanted to mention Clethra I applied to Mr. Deyell for a picture. That did the trick; no matter how many common aliases my group could conjure, Mr. Deyell's picture told the story.

With all this trouble, why bother with it at all? I suppose I shouldn't, but its honey is so excellent that no other honey in Jersey can compare with it for delicacy of flavor, saleable body, or eye appeal. If I were

able to harvest a bumper crop every year, I am sure the retail trade would be conquered no matter what the market conditions. Also, New Jersey's main crop of honey would probably come from Clethra if it weren't for its extreme inconstancy. In fact, beekeepers have an expression: "As fickle as Clethra", since this yielder of delectable honey yields only about once in seven years. Before the gasoline rationing beekeepers in this part of the state were establishing yards in the soap bush area, and moving their populous colonies to these yards in the hope of bringing home truckloads of honey; not a far fetched idea at that, for when Clethra does yield, it does produce copiously, often times increasing scale colonies 15 pounds per day sometimes for about ten days.

But, oh, the uncertainty of it; after the second or third day of the flow a heavy rain will seem to stop the flow. Too much rainfall before Clethra blooms seems to queer all chance of a flow. Our state entomologist, Robert S. Filmer, has advanced the theory that this rain in itself is not so detrimental as the quantity of water backing up in the ditches and chilling the roots of the Clethra plants that grow along these ditches, thus hindering the plants from secreting nectar. This would seem quite logical since Clethra grows mostly along these ditches and cranberry bog drains.

My own experience bears this out, as I have a small yard in the "pine area" and in the vicinity of a sandy ridge which divides this section of the state and acts as a watershed diverting water on one side to the Delaware River and shooting water down the other side toward rivers that flow to the ocean. Here the land is high and dry and there is some Clethra growing, although it never attains the size of that growing in damp areas, and during wet seasons bees will gather from these dry land plants which seem to yield quite well. But, of course, there are not enough in this area to produce large crops, and in dry years these plants yield not at all. I have often wondered if these plants were "sports", particularly adapted to dry land, or a different variety of Clethra. Next year I hope a state botanist will be able to answer this for me.

On November 15, 1945, I had the good fortune to hear Mr. Allen Latham speak at a meeting of the Lehigh Valley Beekeepers' Association in Allentown, Pennsylvania, and evidently Clethra had surrendered a crop to Connecticut beekeepers, for Mr. Latham was displaying a section of comb honey from this source. I noticed it was a lighter color than Jersey's, and its characteristic "golden glint" was not nearly as prominent as ours. However, there was no mistaking its heavy body and distinctive aroma. On asking Mr. Latham about the color, he responded that it had never been that light before, yet he had never seen the marked golden glint I spoke of. The Connecticut honey was not quite as distinctively capped as Clethra in our area which always seems to be sealed with a yellow wax whose color is comparable to the capping usually associated with goldenrod flows.

Last year most of New Jersey's main honey plants failed to yield for various reasons; too wet to harvest a spring flow and it rained almost continuously in the summer when sumac-sweet clover was in full bloom. The early frost ruined all chances of a goldenrod-aster flow. Yet, Clethra yielded a nice crop and it was lucky that it did since it could be used to feed colonies for winter although it was a sad sight to see this sort of honey being used to winter bees.

Just the other day I examined one of these colonies and noticed that the bees were wintering very quietly because of these combs of well ripened Clethra honey, and I told myself that it was well that Clethra did yield last year for now I would not have to worry about trying to get a crop for a few years since it is now not expected to yield until 1952. Then the sunlight shone through that comb of honey and that golden glint got mixed up with my eyes. I then took a fingerful to taste and my better judgment left me as I realized that next year I'd be in that area once again trying to produce a crop of honey from Clethra alnifolia.

Maple Shade, N. J.

A Re-emphasis on Strong Colonies and Forces of Honeybees

By D. O. Wolfenbarger

Delaware Agricultural Experiment Station, Newark, Delaware

The significance of the beekeepers' slogan "Keep all colonies strong" is usually unquestioned. It is not always, however, fully appreciated nor placed in operation. An examination of published data, perhaps from a slightly different viewpoint from that of the author, may have interest, frequently are worthwhile, and should provide a better understanding of their value.

It might be expected that a colony of, say, 100,000 bees would provide weight gains 10-fold greater, or would send 10 times as many honeybees into the field for pollination purposes than would a colony of 10,000; that a colony of 50,000 would contribute 5-fold more weight gains or provide five times as many honeybees for pollination. Such a relationship would be one of direct proportion. If this were true, a weak colony would contribute proportionately as much as a strong one. It is a matter of beekeeping experience, however, that strong colonies usually outstrip weak ones so far in performance that the increases can not be in direct proportion. It may well be asked, therefore, how much differently strong and weak colony forces, or how large or little pollen reserves affect the performance records. This presentation is given to indicate the relative effects of different colony strengths, population densities, or amount of pollen reserves associated with colony performances, such as weight gains, number of honeybee flights, and orchard population levels. Graphs were chosen to illustrate the principle discussed. The observations recorded by the different authors were plotted and curved (or straight) lines were drawn (freehand, through or as near to as many observed points as possible and yet give a smooth curve) among the observations. The observed values were not plotted because of confusion resulting from so many details.

Data presented by Farrar (1937) giving colony gains based on number of bees per colony are shown in Figure 1 to illustrate the relationship between gain, in pounds, and colony strength, in number of honeybees. Production records were plotted against average numbers of bees per colony. It is noted that the curves begin to slope at the weaker colony strengths. As the colony strengths increase the curves bend upward with increasing slopes and indicate more rapid gains in weight. Colonies of 20,000 honeybees are seen to make not 2-fold greater gains than those of 10,000 but more nearly 3-fold greater gains; colonies of 50,000 are seen to make not 5-fold greater, but more nearly 12-fold greater gains. The three curves are noted to have essentially the same slope, adding importance to the observation. Although the positions on the graph differ somewhat, considerable confidence may be placed in these data to illustrate honey production associated with colony populations.

The extensive data reported by Woodrow (1933) covers the number of bee flights per colony, and refers more especially to pollination. The number of flights per colony is, however, probably of no less importance than in honey production. From the average number of flights per two-minute period for each of 10 colonies, from the average colony weight, and for each of two temperature ranges, 42°-64° F. and 64°-86° F., Figure 2 was prepared. The curves in Figure 2 not only slope upward, but the slopes become more pronounced with increases in the number of bees per colony. Nine pound colonies have nearly 5-fold more flights than three pound colonies, and they have nearly twice as many flights as six pound colonies. This is similar in principle to the increased production by more populous colonies shown in Figure 1.

The differences between the curves representing different temperatures indicate, furthermore, that stronger colonies provide even more honeybee flights at higher than at lower temperatures.

In an older publication, Hutson (1926) included data valuable not only to those interested primarily in pollination but to beekeepers generally. A concentration of 12 colonies in a group was compared with one of 5 colonies, by counting the number of honeybees visiting apple blossoms at different distances from the respective groups. The averages of several counts made in each case are shown in Figure 3, with curves drawn to illustrate the number of honeybees visiting the blossoms. Honeybees were found in substantially greater numbers near the 12-colony group and their abundance became less at increasing distances up to 100 yards. The relatively small number of honeybees about the 5-colony group was practically the same at 25 yards as at the 100-yard distance. This is interpreted as meaning that the 12-colony group raised the population level within 100 yards to a point considerably above that for the orchard, apparent at about the 100-yard distance. The 5-colony group, on the other hand, contributed its quota of bees but failed to raise the counts in near-by trees.

In view of the more recent understanding of the value of pollen as related to strong colonies, data given by Farrar (1936) and more recently by Jamieson (1945) are recast to illustrate the value of pollen reserves to honey production. It appears that large reserves of pollen, however they may be responsible or whatever they may do to accomplish it, are associated with larger honey production per colony. The increased amounts of honey produced or gains made, based on measured amounts of pollen, is illustrated in Figure 4. Different lines are drawn representing different groups of colonies from which the data were taken.

The lines representing data from Farrar's (1936) observations were based on colony weight changes during the month of June principally. This was undoubtedly the time of greater differences in colony changes. The line representing Jamieson's (1945) data, extending through the season, although illustrating smaller differences than during an early part of the season, shows positive increases.

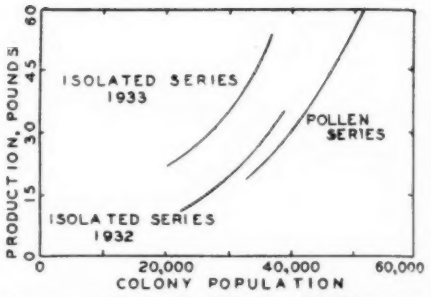


Fig. 1.—Colony populations affecting production of honey. (Data from Farrar, 1937)

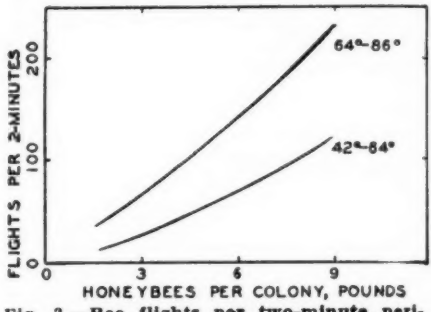


Fig. 2.—Bee flights per two-minute periods from colonies having different weights for two temperature ranges. (Data from Woodrow).

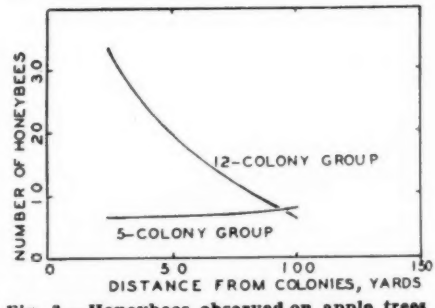


Fig. 3.—Honeybees observed on apple trees at different distances from 12 and 5 colony groups. (Data from Hutson.)

Attention is called to the slopes of the lines in Figure 4. It is noted that there is a slight upward slope with each line. This is the increased colony gain attributed to the increased amount of reserve pollen.

The relative rates of increase in colony gains in the data given by Farrar (1936) suggest that a doubling of the pollen reserves means almost a doubling in the colony gains during the June period. Seasonal honey production, in pounds per colony, as shown by Jamieson

(1945), however, showed about one fourth more honey produced by doubling the pollen reserves.

The observed values, experimental evidence, on which the lines in Figure 4 are drawn, although not given in the figure, lie on or very near the lines. This shows that sufficiently large enough numbers of colonies were used to obtain the data in each instance to merit faith in the results. The different lines, furthermore, have similar rates of slope, thus adding further confidence to the principle involved.

In a five-year survey of winter losses of colonies in Ohio, Dunham (1944) has shown that severe winter losses of packed colonies were comparatively less severe than were those of unpacked colonies. A relationship is illustrated by the data which may be given consideration. Winter losses of unpacked colonies were shown to be not only higher than those of packed colonies, but in years of very severe losses in unpacked colonies the differences between packed and unpacked colonies increased. In other words, in 1935-1936, the percentage of winter loss of unpacked colonies was 34.9, while that of packed colonies was 17.1, a difference of 17.8 percent. In 1938-1939, the year of the lowest winter loss given, 4.6 percent of the unpacked colonies were lost, while 4.1 percent of the packed colonies were lost, a difference of 0.5 percent. This winter loss relationship is illustrated in Figure 5, where a curve is drawn among the observed points.

According to the relationship in Figure 5, a 30 percent loss of unpacked colonies may be expected to differ from packed colonies by being 15 percent greater. A 10 percent loss of unpacked colonies may be expected to differ from packed colonies by 2½ percent.

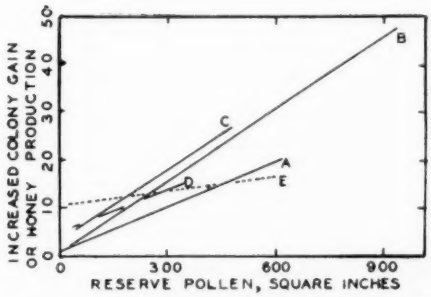


Fig. 4. — Honey production and colony gains associated with different amounts of reserve pollen. (Data from Farrar, 1936), Campus series - A; Sechrist series - B; Corthell series - C. (10 added to each colony gain observation to elininate a minus quantity); Hatch series - D (10 added to each colony gain observation to eliminate a minus quantity). Data from Jamieson (1945), Table III-E.

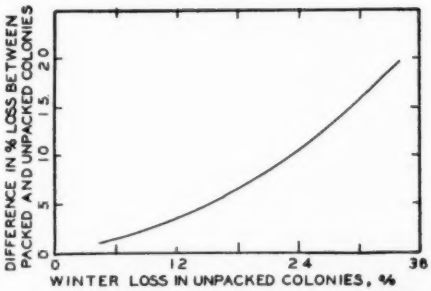


Fig. 5.—Differences in percentage of winter losses between packed and unpacked colonies as related to losses in unpacked colonies. (Data from Dunham.)

Literature Cited

Farrar, C. L. Influence of Pollen Reserves on the Surviving Populations of Over-wintered Colonies. American Bee Journal, 76 (9):462-454. 1936.

Farrar, C. L. The Influence of Colony Populations on Honey Production. Jour. Agri. Res. 54:949-954, illus. 1937.

Hutson, Ray. Relationship of the Honeybee to Fruit Pollination in New Jersey. N. J. Agr. Exp. Sta. Bul. 434:1-32, illus. 1926.

Jamieson, C. A. The Relationship of Pollen Reserve to Colony Population During the Inactive Season. Canadian Bee Jour. 54:95-97. 1945.

Woodrow, A. W. The Comparative Value of Different Colonies of Bees for Pollination. Cornell Agr. Exp. Sta. Mem. 147:1-29. 1933.

STANDARDIZATION OF HONEY CAN CAPS

The National Standard 2½ inch screw cap for honey cans sought after by the National Federation of Beekeepers' Associations for the past few years now appears to be near a realization. This may now be considered the standard since most of the manufacturers make this size. There still are many odd and off sized caps, from 1½ to 3 inches, made, but insistence by beekeepers and honey packers that the National standard screw be supplied will soon establish uniformity. Most of the off and odd sizes come from California and New York states. In the middle west from now on most honey cans will be of the National Standard size.—Adolf S. Carm, Chicago, Ills.

The Ohio Apiaries Cooperative Association

By E. R. Root

It was 28 years ago last month that a young man from Central Ohio called on us at Medina to talk bees. He had just come into possession of four colonies and wanted to know more of the whys and wherefores of beekeeping before he got too well acquainted with his new hobby; or should it be said that he wanted to get better acquainted before he wished to chance the pointed ends of the bees.

After spending two days with us visiting our bee yards, increasing his knowledge, by a million or more questions, he said on departing, "I believe I will go into the bee business". He has done that to the tune of becoming, from the meager start of four colonies, one of Ohio's largest commercial beekeepers. That young man was Lloyd C. Gardner, today treasurer and manager of the Ohio Apiaries Cooperative Association, Inc., an organization formed by six of the more important Ohio commercial honey producers for the purpose of marketing their honey at a respectable figure during the depression years. It was not until after these men proved definitely that the endeavor was sound that they opened their doors to other Ohio producers.

It was Lloyd Gardner who proposed the idea, and it was Emerson Long, William Coulter, R. D. Hiatt, S. E. Bailey, and Raymond Bailey who, Lloyd Gardner says, were willing to go along, win or lose To these men belongs the credit of the successful development of the cooperative. "Without their faith and courage", Mr. Gardner says, "we would not have gotten to first base". Notable is the fact that the progress of the cooperative has been made without one cent of capital being raised through borrowed funds, and note also that the members have not been called upon to dig into their pockets for operating funds. The entire program was founded upon the faith the original members had in their business, their product, and the trust and confidence they had in one another.

In the beginning, all that was used for the capitalization of the business was the honey held in storage. Even when the design of new

Fig. 1.—Ohio Apiaries Cooperative Building in process of construction.

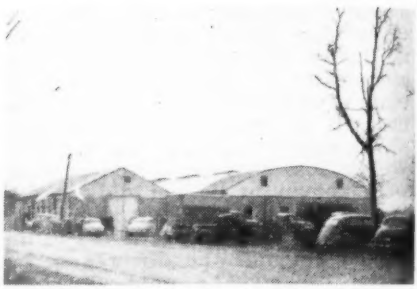


Fig. 2.—Plant at the time of the annual meeting February 21st last.

type containers was proposed and climaxed, only the desire to do something with what they had to do it with (honey stocks) was offered to the glass company as proof of their intentions. The glass company went along on that basis. This shows again that faith in one's business and faith in one's fellow man goes a long way down the road to success.

In the spring of 1940, the honey house of Mr. Gardner burned to the ground. Destroyed in that fire was not only most of his honey producing and extracting equipment but also all of the stocks of bottled honey, bulk stocks, containers, and other equipment belonging to the cooperative. It was a hard blow to the struggling cooperative even though the losses were covered by insurance. They now were without a packing plant, and with prices still below production costs, honey hard to sell, it seemed that the whole thing would be dumped overboard. Again the desire to do something—faith in the effort—came to the front and a new building began to appear where the old one burned.

The new building was of near fire proof construction, cement block walls and concrete floor, thirty two hundred feet of floor space originally planned to accommodate extracting equipment and the bottling equipment of the cooperative. It took just one season to show that the floor space was only about one fifth large enough to adequately serve the needs of the Cooperative alone. So a new building was planned joining the old one with the addition of a boiler room large enough to accommodate a 50 horsepower engine. This new addition was under construction at the time of our first visit last fall, as shown in Figure 1. Later, at the annual meeting of the members on February 21st, we took another snapshot after its completion, see Figure 2.

In spite of the decided off-season for honey production, and in spite of a large building program when labor and material were scarce and high priced and when its members could expect nothing better than an even break, the Cooperative made an excellent showing in token of which each member was given a dividend of his share of the earnings. In addition to all this, members and guests were served **free**, at a nearby church, a chicken dinner which at ordinary restaurants would cost $2.00 a plate. This was not all, there lay at each plate a first class automatic pencil. With such a showing in an off year, dividends in the pockets of its members and a good dinner, what can its members expect in a good or even average season? The Ohio Apiaries Cooperative are to be congratulated. No little credit is due to its manager, Mr. Gardner. For a further report of the evening session see page 228 of April Gleanings.

From a humble beginning this Ohio beekeepers cooperative has grown to be one of the largest of the honey packing plants in this section of the country. With the added space, three million pounds of honey can be packed annually.

Today practically all of the important commercial Ohio beekeepers hold shares of stock in the Cooperative whose annual normal production would amount to nearly three million pounds of honey.

Paton to Retire From Bulk Honey Business

John Paton, President of The Paton Company, Inc., announces that as of May 1st his concern will retire from the distributing and sale of bulk honey. The business hitherto conducted by the Paton Company in bulk honey will be transferred to R. B. Willson, formerly one of Paton Company's key executives, who will operate under the corporate name of R. B. Willson, Inc.

Mr. Paton states that his Company will, in the future, concentrate upon the marketing of its famous brand of honey, Golden Blossom Honey, a favorite with New York housewives for over a quarter of a century. In addition, it is planned to add other companion items under this brand.

Mr. Willson's new firm begins operations May 1st, and will be known as R. B. Willson, Inc. For the present, at least, his headquarters will be in the offices of the Paton Company at 630 Fifth Avenue, New York city.

The operations of the Paton Company will be intensified in connection with its brokerage division. Announcements will be made from time to time in connection with this phase of Mr. Paton's business.

The Paton Company will retain the services of Mr. Willson, one of the country's foremost honey authorities, in a consulting capacity. Mr. Willson's honey background is extensive and distinguished. He was for four years on the staff of Cornell University, has written a number of authoritative papers upon honey and bee culture, and is well and widely known both in domestic industry and in Latin America.

The Paton Company, in reaching this decision, has entire confidence that Mr. Willson's new firm will do everything to service in an efficient manner those accounts who have been loyal to Paton for so many years.

R. B. Willson

Effect of DDT on Honeybees

Taken from April 1946 Federation News Letter

By Dr. W. E. Dunham

The development of any new insecticide for the control of injurious insects is always viewed with concern by entomologists, apiculturists, and specialists in the field of insect pollination.

The use of DDT for the control of the coddling moth and leaf-hoppers has been heralded by fruit growers as the answer to an age old problem. However, they also recognize that adequate insect pollination of orchard bloom represents a requirement necessary for profitable fruit production. Fruit growers are naturally anxious to know the effect of DDT on honeybees. With this in mind a summary of laboratory results, field tests, and observations on the effect of DDT on honeybees is presented.

Laboratory Results:

Stomach poison.

E. C. Holst (1944), Federal Bee Culture Laboratory. He fed caged bees a 1 percent Gesarol Spraying Agent (0.05 percent of DDT) in honey-sugar syrup, in dilute honey and in queen candy. In six tests involving 20 or more young bees per cage per test, the majority of bees were dead within 17-42 hours. In the 6 control cages few or no bees died.

J. E. Eckert, Apiculturist, (1945) University of California. **DDT suspended in Sugar Syrup.** In the first preliminary test, 0.5 gram of 98 percent DDT was added to a 20 percent sugar solution, mixed thoroughly, and allowed to stand overnight. Part of the clear liquid was decanted in the morning and placed in vial A, while the remainder was well shaken and poured into vial B. Both vials were covered with Indian Head cloth and inverted on the wire of separate cages of 30 bees each. Two bees died within 3 days in the cage fed the **decanted** material, whereas all 30 were dead within 12 hours in the cage fed from vial B. When caged bees were fed continuously on a preparation consisting of 0.025 gram of 98 percent DDT suspended in 20 percent sugar syrup, 60 percent of them died within 24 hours, and all of them were dead within 48 hours.

DDT in Queen-cage Candy. Candy containing 1, 2, and 4 percent of DDT killed all bees within 12 hours, and most of them were incapacitated within 6 hours. Concentrations ranging from 1,000 to 10,000 parts of sugar candy to 1 part of DDT also killed all bees within 48 hours. **Effect of DDT in pollen.** After 0.5 gram, 2 grams, and 4 grams of 98 percent DDT was mixed in approximately 200 grams of pollen of soybean flour respectively, and placed as pollen cakes over colonies, no noticeable detrimental effects on the brood or bees were observed.

E. J. Anderson, Apiculturist, (1945), Pennsylvania State College. We found that percentages of DDT as high as half of 1 percent could be fed to bees in pollen cakes without serious damage to the colony. There was a temporary loss of bees and some brood but from which they seemed to recover quickly and dedeveloped in a normal manner. This, according to our judgment, would be as high a percentage of DDT as the bees would normally get in pollen collected from bloom. In other words, the damage from DDT through the use of dusts should be a great deal less than from the use of arsenic dusts.

Contact Poison

E. C. Holst, (1944), Federal Bee Culture Laboratory. No contact-poisoning effect of 0.05 percent DDT was demonstrated when bees were kept in cages previously sprayed or when the bees were sprayed directly. However, when the bees were placed in cages previously sprayed with 1 and 2 percent of DDT, most of the bees died within 6 hours, and the rest were definitely poisoned.

Robert S. Filmer, Associate Research Entomologist, (1944), New Jersey Agricultural Experiment Station, and Charles L. Smith, Rutgers University. Laboratory tests where contact action of DDT was tested by exposing honeybees to glass plates containing a dry spray film of DDT (spray suspensions containing 1 pound of DDT to the 100 gallons or 0.125 percent DDT) showed that 20 to 30 minute exposures resulted in a high kill of honeybees within 12

hours. Later tests of caged bees over sprayed plates for 15 minutes showed no more mortality than in the control cages, exposures of 20 minutes resulted in a 60 percent mortality of bees, while exposure of 30 minutes showed a 100 percent mortality at the end of 12 hours.

J. E. Eckert, Apiculturist, (1945). Thirty bees were placed in each of three screened cages and were dusted through the screen with 1, 2, and 3 percent concentrations of DDT, respectively. All bees in cages dusted with 2 and 3 percent DDT were dead in less than 15 hours. Fifty percent of those in cage 1 (1 percent DDT) were dead after 24 hours.

Later, the bees in two 3-frame nuclei and in one 10-frame colony were liberally dusted with 2 percent DDT, care being taken to get some of the dust on sealed brood and in the cells of unsealed brood of one comb in each hive. Twenty-four hours later there was no apparent mortality of the adults. The younger larvae had disappeared but at least a majority of the older larvae were present and their cells were later sealed over.

Eight grams of dust, 3 percent DDT, were shaken over the tops of the frames of a colony, including one side of a comb containing both sealed and unsealed brood as well as over the bottom board and over at least 200 bees. By the following morning about 100 bees were on the ground in front of the hive. All younger larvae had been removed, but some older larvae were present. No additional dead were found the following day and the colony was not permanently injured.

E. J. Anderson, Apiculturist, (1945). Liquid sprays containing as high as .5 percent oil soluble DDT will kill the bees rather slowly. Even lower percentages will cause at least temporary signs of paralysis from which some bees seem to recover. Under laboratory conditions sprays of a higher concentration than .5 percent would undoubtedly be quite destructive if the bees were hit by any quantity of it.

Laboratory results to date can be summarized as follows: 1. As a stomach poison .025-.05 of DDT kills bees in 17-48 hours when fed to bees in sugar syrup. DDT in "pollen cakes" is less poisonous to bees than when fed to them in syrup. 2. As a contact poison bees are killed in 12 hours when confined in cages which have been previously sprayed with .125 percent DDT. Bees confined in cages and dusted with 1 percent DDT show a 50 percent mortality in 24 hours and when dusted with 2 percent DDT death occurs in less than 15 hours. When full sized colonies are dusted with 2 percent DDT no apparent death of adult bees occur although the majority of the unsealed larvae in brood combs are removed by the bees.

Field Tests and Observations:

E. J. Anderson, Apiculturist, (1945). Field observations with bees which were in an area sprayed for forest insects and for mosquitoes showed a small and temporary loss from the use of DDT. Liquid sprays containing as high as .5 percent DDT kill the bees rather slowly.

J. E. Eckert, Apiculturist, (1945). During the past season I have observed bees working on onions, alfalfa, cotton, and have a report of bees on nectarines—all dusted with around 5 percent DDT while the plants were in bloom. In all of these observations, there was no appreciable effect on the colonies located in the vicinity. In one case, colony population was reduced by from 2 to 5 frames, but other colonies located in the same territory did not show this reduction.

I am advising that DDT not be applied to field crops or to fruit trees in bloom in order to prevent injury to pollinating insects. I doubt if any injury will result to bees working on fruit or seed crops if DDT is applied before or after the blooming period. When a 5 percent dust is applied in 30 pounds of dust, only 1½ pounds of toxic material are applied, whereas 21 pounds of arsenic is contained in the same amount of a 70 per cent calcium arsenate dust.

Present observations indicate that DDT when properly applied under field conditions is far less injurious to bees and other pollinating insects than arsenicals and the chemical loss of bees may be reduced to an economic level when DDT is substituted for the arsenicals in pest control programs. However, we will continue to advise that sprays and mists be applied instead of dusts in the control of insects and plant diseases in order to confine the materials to the fields treated, thus re-

ducing the hazard to bees, livestock, and other interests now being created through the drifting of poisonous dusts.

Paul M. Eide, Assistant Entomologist, (1945), The State College of Washington. Our work on bee poisoning during the past season has been confined to field observations on the effect of toxic dusts used on potatoes for flea beetle control. Our knowledge of its effect is quite limited. Bee yards in the vicinity of DDT dusted fields were strong and did not show the usual symptoms of poisoning.

In a series of field tests with repellents conducted near Yakima last summer, DDT dusts were tried among other things and found to have very little repellent effect. Our tests involved only a narrow strip of sweet clover, however, not entire fields.

Robert S. Filmer, Extension Horticulturist, (1945), New Hampshire Agricultural College. While we have done a lot of work on DDT here at this station, we have not tried it out on bees. Incidentally, what DDT has been used on vegetable and fruit crops apparently has not injured honey bees although again this observation is just a chance observation that my bees around the dusted or sprayed plots did not seem to suffer from any kind of poisoning.

Ray Hutson, Entomologist, (1945), Michigan Agricultural College. Our own observations on the mortality among bees in hives placed beneath trees sprayed with wettable powder DDT (insoluble in water but forming a suspension like lead arsenate) indicated no measurable effect during 1945. The sprays were applied some two weeks after blossoms had shed their petals. George Friday, a grower at Coloma, Michigan, had a similar experience.

J. A. Munro, Entomolgist, (1945), North Dakota Agricultural College. I have been watching beekeeping carefully in the areas where DDT was dusted or sprayed, and based on these observations, I would say that DDT is less of a hazard to bees than the arsenicals. On DDT treated tomato plants I have noticed an occasional dead bee that I judged had died from the effects of DDT while visiting the blossoms for pollen. However, a bee yard in the near vicinity of this instance did quite well in producing an average of about 150 pounds of honey per colony. Last summer DDT in both dust and spray formulations were used rather extensively for the first time, but I did not receive a single complaint of its killing bees.

W. A. Rose, Chief, (1945), Fruit Insect Investigations, Dominion Entomological Laboratory. The fear that DDT would have a disastrous effect on honeybees has not been borne out by work carried on in this vicinity. Although bees caged with DDT-sprayed foliage quickly succumbed, those collected in the field from blossoms of dandelions, clover, and buckwheat sprayed with DDT (1 pound actual DDT, in the form of a spray powder, per 100 Imperial gallons) lived as long in captivity as those from unsprayed blossoms. This past year a colony in an orchard sprayed four times with DDT and in which the buckwheat cover crop was also sprayed twice while in bloom, remained healthy and built up to strong proportions during the summer.

All the evidence obtained so far from actual orchard and field studies certainly suggests that the use of DDT in orchards should not create a serious hazard to honeybees provided, of course, the insecticide is used sanely.

H. A. Scullen, Associate Professor of Entomology, (1945), Oregon State College. This past June the writer had an opportunity to give some special attention to the effects of DDT on honeybees when it was being tested for the control of the hairy vetch weevil which threatened to wipe the hairy vetch industry out in the state. Our observations were encouraging but not entirely conclusive, and further observations and experiments will be carried on next year. We found no evidence of dead or dying bees in or about the colonies close to the dusted fields. We found that the bees left the field for a few days but later returned.

George H. Vansell, Associate Apiculturist, (1945), Federal Bee Culture Laboratory, Davis, California. In our use of DDT on seed alfalfa fields to control Lygus bugs, we did not see any serious loss of honeybees. Some bees, both honey and wild, are known to have been killed in the fields during dusting. However, by far the greater part of the

dusting was done just as the blossoming period started so even the killing during the application was not serious. In addition the alfalfa blossomed profusely to result in an increasing bee pasturage. I do not feel so optimistic about the effects on wild bees as in the case of honeybees with their colony organization.

Field tests and observations to date can be summarized as follows: 1. Practically no reliable information is available on the possible effect of DDT on wild pollinating insects such as bumblebees, solitary bees, flies, and other forms. 2. To reduce the hazard to pollinating insects and livestock, the application of DDT in spray or dust form should be confined to fields treated and never applied to blooming plants. 3. Whereas the information gathered in field tests and observations in 1945 is most encouraging, nevertheless it cannot in any way be considered as conclusive. With the extensive use of DDT this coming season more authentic information will be available regarding its effects on wild pollinating insects and honeybees. 5. Observations indicate that when properly applied under field conditions DDT is far less injurious to honeybees than are arsenical poisons.

Stirring the Witches' Brew

By Leon C. Nieb

(Continued from May)

After 90 days the score stands as follows with the two colonies fed sulfathiazole: The original colony of the two, after having a few young bees added, began to gather strength fast. The first four or five weeks after treatment showed no new death losses from AFB. About the sixth week I detected three cells of pupae freshly dead of AFB. I gave one more feeding of sulfa at the end of the sixth week. I have not fed any since. This colony has had a clean bill of health the last four inspections.

Colony number two which was originally the stronger of the two began to fall behind the other in strength. The queen was failing and supersedure cells were started. The colony being too weak to cover all its combs could not do a good job of housecleaning and the combs remote from the small central brood nest still contained many of the old dried scales from the original infection. The central combs were cleaned up in fine shape, but I found two or three cells of dead AFB from about the end of the sixth week until the old queen disappeared. Her daughter was a little slow about starting to lay and began about a week ago. I am anxiously waiting to see what, if any, influence she will have on the cleanup. This colony lost about three weeks of brood rearing because of loss of the old queen. I discontinued the use of the sulfa at the same time its use was stopped on the other colony in the experiment.

At this point let me introduce the idea that if I were going to try to clean up a diseased apiary I would not attempt it with badly diseased or weak colonies such as I am working with. [Mr. Kelty of Michigan brings out this point in his article appearing in the May 1946 issue of Gleanings.—Ed.] I am doing it the hard way to see just how powerful this sulfa really is and the extreme limit of its effectiveness.

I really marvel that the colonies have made the progress they have made to date, considering that one colony was not strengthened at all and lost its queen on top of it. It has been an uphill fight against what would have been certain death without the sulfa. The battle is not yet won and they may relapse into their former condition. According to our best scientific authorities, sulfathiazole does not kill the spores of AFB. But, be that as it may, it surely affects the colony in a beneficial way.

New Smyrna Beach, Fla.

[As will be noted in Mr. Nieb's articles, he simply gives his experiences. He "marvels that the colonies have made the progress they have". Time will tell.—Ed.]

Taste Ticklers

By Mrs. Benj. Nielsen

And they are just that! Recipes that are easy to prepare; that turn into toothsome ticklers in short order and that you will want to serve again and again. For a tasty tonic effect, try the luscious honey rhubarb pie—a far cry from grandma's "spring tonic", sulphur and molasses, (ugh!) and probably just about as effective.

Honey rhubarb pie.—Photo courtesy the Kellogg Co.

Honey Rhubarb Pie

Two and ½ cups corn flakes, 4 cups diced fresh rhubarb, and ¾ cup honey.

Crush corn flakes slightly and sprinkle in pastry lined pan. Mix rhubarb with honey; heap up in pan. Moisten edges of pastry; cover with top crust. Bake in hot oven 450 degrees F., for 15 minutes, reduce heat to 350 degrees F., and continue baking for about 40 minutes.

Yield: 1 8-inch pie.

Corn flakes thicken the juice and keep it from running out of the pie. Any pastry may be used, however, the following is very good.

Bran Pastry

One fourth cup bran, 1½ cups sifted flour, ½ teaspoon salt, ½ cup shortening, and 4 tablespoons cold water (more or less).

Crush bran into fine crumbs; combine with flour and salt. Cut in shortening. Add water, a little at a time, until dough is moist enough to hold together. Divide dough in half. Roll on lightly floured board to about one eighth inch thickness. Fit pastry into pie pan; trim edges. Roll out top crust.

Honey Peach Batter Pudding

Two and ½ cups canned peaches, diced, 1 tablespoon cornstarch, 1 cup sifted flour, 1 teaspoon baking powder, ¼ teaspoon salt, ¼ cup shortening, 1 egg, ¼ cup milk, ¼ cup honey, and ½ teaspoon vanilla.

Heat fruit and juice mixed to a paste with the cornstarch and place in a greased casserole. Sift flour, baking powder, and salt together. Work in shortening with pastry blender. Mix egg with milk, honey, and vanilla. Pour into flour mixture. Stir with fork only until blended. Drop from tablespoon onto fruit to form individual mounds for serving. Bake 30 minutes in a hot oven, 400 degrees F. Serve warm with cream. Serves 8.

Honey Brownies

One and ⅓ cups sweetened condensed milk, dash of salt, ¼ cup honey, 2 cups honey graham cracker crumbs, 1 cup nut meats, and ½ tablespoon vanilla.

Mix milk, salt, honey, graham cracker crumbs, nut meats, and vanilla. Blend thoroughly. Spread mixture in 8 x 12-inch pan greased and lined with waxed paper. Garnish as desired. Bake in moderate oven, 350 degrees, F., 15 minutes or until set. Turn from pan and remove paper at once. Cool, cut into squares. Makes about 24 brownies.

Honey Gingerbread Upside Down Cake

One third cup shortening, ½ cup sugar, 1 egg, 2 cups sifted flour, ½ teaspoon salt, 2 teaspoons baking powder, ¼ teaspoon soda, 1 teaspoon cinnamon, 1 teaspoon ginger, and ¾ cup sour milk. In bottom of pan place 2 medium sized apples, pared and sliced, 2 tablespoons butter, ¼ cup honey, and ½ cup chopped nuts.

Cream shortening and sugar, add egg and beat well. Add honey, blend. Sift dry ingredients and add alternately with milk. Melt butter in 9-inch square pan. Add honey and nuts. Heat slightly and blend. Arrange apples. Pour batter over apples. Bake 30 minutes at 350 degrees F. Turn cake out at once after removing from oven. Serve with

Honey Cream Cheese Topping

One package cream cheese (2 oz.), ¼ cup honey, ½ teaspoon vanilla, ⅛ teaspoon nutmeg, 2 tablespoons top milk.

Cream cheese, add all ingredients, and beat well.

Live and Learn - - - By Propolis Pete

Until a few years ago I was always in a dither about the right and wrong way to put on supers. My bees are located in a place where there is very little pasturage. They put up honey because there is scattered picking all through the season from small patches around the farm houses, where a farmer might have a little patch of raspberries or boysenberries for his own use, or maybe a little clover on the lawn around the house. Not all, but about half of the farms keep a cow for the family milk. In these cases there is generally a small hay lot, but they use timothy more than clover. Sometimes they have a few trees in an orchard planted to clover, which is used as a combination pasture and orchard. Maybe that isn't good farm practice, but these are potato farmers. They know that well. Go up to five or six hundred bushels to the acre in record years. Average around three fifty to four hundred.

Honey never comes in very fast, and consequently I have never had much luck producing comb honey. So, if that's your end of the honey business, just skip it. I don't know anything about it.

You will hear about all kinds of systems for supering, such as lifting off the super immediately above the brood nest and putting a fresh one under it. Also, four or five times during the season you shuffle the supers around so that the bees will constantly be trying to fill up the gaps. This is supposed to be good for colony morale. I tried that, but there isn't much romance to it. Juggling heavy supers around may be all right for Samson or a circus strong man, but along around the fourth or fifth hive I generally get a crick in the back.

For the past few seasons **I simply put the empty supers on top of the pile.** It's easier, and I don't see that any less honey is put up because of it.

The best illustration of easy supering I ever saw happened last summer. An old farmer gave a hive of bees to my brother, who lives about two miles from my place. This old bird found a swarm a couple of years ago, put a box near it, and run. The bees occupied the box and he has been afraid to go near it since.

Bill asked me to look it over, and I did, as best I could. Being in a box, the combs were all cockeyed, but by some miracle the box that the old fellow had used was a broken hive body. Where it came from no one knows, but transferring the bees into one of my regular ten frame bodies was a cinch. All I had to do was to put a super of combs over it—the queen went up and the bees were transferred.

Around the first of August, Bill decided that he was going to get some honey. I told him that there would be no more surplus that season, and that he would be lucky if the bees filled the brood bodies with enough to winter on. But put on a super he would. The least I could do was to lend him one of mine.

On Labor Day, to satisfy him, I looked at it. Just as I predicted, there was the body just as we had put it on. It didn't even smell of honey. So I told him to take it off and store it until next year, then put it on early in the spring to take advantage of the earliest flows. A week later I had to leave town, and I didn't hear any more about it until the middle of October after everything was done.

Bill met me with a big grin on his face. "Want some honey?", says he. Sure enough, those bees had built out the foundation, filled every cell with a nice mild white honey and capped it, capped every cell. I had never seen anything like it. There were ten frames filled with sealed honey from wood to wood, up and down, across and sideways. We weighed two of the frames, and each was exactly seven pounds. There must have been close to 70 pounds in that hive body. Sounds like a tall story, but it isn't.

I felt sure that they would be light for winter. Wrong again. The upper body of the double brood chamber was plenty heavy on a lift. They will probably come through the winter in good shape. I refuse to commit myself at this writing. I might be made a monkey again.

What probably happened was this: Around the middle of August the support price for potatoes dropped.

(Continued on page 377)

From the Field of Experience

KEEP QUEEN BELOW EXCLUDER THE LATTER PART OF SEASON

By E. S. Miller

Whatever system of manipulation is used during the clover flow, the queen should be confined to the lower story during late summer and fall. The bees will then deposit most of their winter stores in the second story, leaving the bottom open for brood rearing. If the queen is allowed to occupy the food chamber, and the third story is removed as surplus, there may not be sufficient food left and a three story hive may be thought necessary for wintering. In such a case it might be just as well in wintering to remove the lower section, which usually would contain empty or only partly filled combs. Where there is no fall flow it would be advisable to confine the brood to the bottom section earlier in the season in order to insure a well filled food chamber. In fact, if the Demaree system is used, the brood should be confined below throughout late spring, summer, and fall, removing the excluder only upon the approach of cold weather.

I can not agree with those who would have the brood occupy the top of the hive and trust to luck as to what may be below. It is the nature of bees to place their stores above the brood and in winter to work up rather than down or sidewise. While it is true that the queen may be forced down by honey stored above the brood if the hive space is limited, this condition does not follow where there are empty supers above with drawn combs. Unless prevented, the queen will go as high as there are any open cells available.

Valparaiso, Indiana.

[We, too, have found that queens tend to occupy combs in the upper story of a double brood chamber, especially in a region that does not give a heavy fall flow. Where fall honey comes in rapidly, the queen is usually driven down into the lower chamber.—Ed.]

BEATING THE WEATHER, AND SHIPPING CAGES

By Chas. Mraz

On page 210 of April 1946 Gleanings, Anonymous wants to know if beekeepers can beat the weather by feeding bees sap from trees. Vermont being the heart of the maple syrup country, perhaps I can answer this question. It seems to me A. I. Root many years ago was also inspired by a similar brilliant thought. Anyone familiar with maple trees and their sap, of course, knows it won't work, mainly because its sugar content is too low. It will average only between 3% and 7% sugar, 3% being the more common figure. Bees are usually not interested in anything less than 20% sugar. At that rate Anonymous could buy a lot of sugar with the wood it would take to boil sap thick enough for bees to take. In fact boiling to syrup makes it worth $4.00 per gallon at present market and almost everybody will admit that's pretty expensive feed for bees.

Secondly, the maples are not very generous with their sap at times. Hot weather in spring for the past two years has cut maple production here greatly. Sap runs best when it is too cold for bees to fly. Hot weather will stop the flow. It is true bees will sometimes lick up sap but only after it thickens by evaporation in the sun. I think Anonymous will find it a lot easier using sugar, even with the red tape it now involves.

On page 208 Allen Latham and E. R. again put on the gloves over package bee shipping cages. Perhaps slipping a cardboard hood over the present type cage will give the advantages of both types of cages. It would darken the cage as in Allen's wooden type, yet keep the advantage of light weight and make observation possible by simply lifting the cardboard hood.—Middlebury, Vermont.

DRY FEEDING OF SUGAR

By P. Elcock, Southwater, England

In England beekeepers have used "dry feed" for bees for many years with success. It is against all orthodoxy and according to some "experts" would kill all our bees, for the sugar used is what is known here as "soft brown". Two pounds of this sugar is put into a 4-pound bag, flattened out, and a bit of the paper is torn away and the bag inverted over the feed hole. If the bees need it they use it and if not it can be thrown away when the first super goes on; but the strange thing is that since using pollen, soya, and milk powder mixed in the sugar, the bees take it in preference to their sealed honey.

DOES BACKLOT BEEKEEPING PAY?

By A. W. Kruse

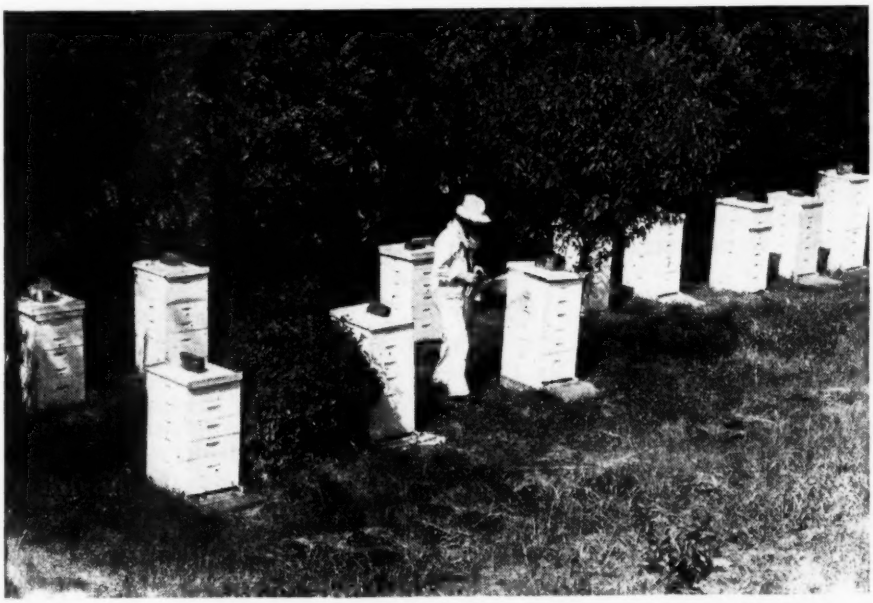
In 1938 I became interested in keeping bees. For the first year or so I kept only a few colonies. Bees fascinated me and I enjoyed working with them.

The possibility of backlot beekeeping on a larger scale was given serious consideration on the merits of making a paying proposition out of it. After thinking the matter over, I came to the conclusion that if properly managed, the answer was yes. Not wishing to invest in a large amount of equipment at one time I purchased what was required from year to year, using no more than the proceeds from the previous year. Of course, there was the original investment, but that was soon cleared up. My plan was for the bees to pay their own way, and they did.

Fortunately, our lot is some 500 feet or more from neighboring houses and gardens. Laying out the yard at the lower end of the lot worked out very nicely.

Fruit trees and shrubbery were set out, also a chinese Elm hedge on the north and west. The bees are pretty well protected the year round. The accompanying photograph shows the yard at the present time

Des Moines, Iowa.



Mr. Kruse's backyard apiary is a beautiful sight

MY HOBBY PAYS DIVIDENDS

By Clifton E. Bradley

Rare is the man who can make his hobby the delight of his wife. My beekeeping has fitted so well into the period of sugar shortage that all along the line I have had a sympathetic ear and a helping hand when it was most needed.

Though I started beekeeping some seven years ago, it was not until 1941 that my yield from a few hives reached 150 lbs. The next year I had over 200 lbs. and was able to sell over $50.00 worth to our village friends and still have all the honey we could use.

During the war our family of six has eaten well, particularly since my wife does a great deal of baking. Even though she says she has missed sugar most of anything during the war, she has used vast quantities of honey in her cooking. At all times there is a gallon jar of honey in the pantry where it is available to fill smaller containers for the table and for cooking use. In the cellar there are another four to six gallons of extracted honey and some comb sections.

The real delight of a hobby, however, is found in being able to pass along some of the sweets to friends and neighbors. When the crop is taken off in the fall we remember all our neighbors, particularly any who may have been nipped by a stray bee. One neighbor whose house was nearer the hives than ours had a keen interest in the work of the bees, and frequently called us when swarms were out. A number of times she was chased into her house by bees, so a little honey in the fall was more than her due.

Since we belong to the Grange and various church groups, our honey appears at most bazaars and food tables. It is different from the usual donations and always finds a ready sale.

It is at Christmas time that the giving of honey reaches its peak, as there are many friends that need to be remembered. A prime section of honey wrapped in cellophane, and then tied up in a gaily decorated paper is just the answer. Though it has value, we feel the initial cost is mainly a labor of pleasure.

Because I came from a large family I am able to have an additional joy in loading up the car when we go once a year to visit the homes of my brothers and sisters. The children are always glad to see us come, for they know that it means sweets from our hives.

When we moved three years ago my hives were among the first things to be moved. I took out the back seat and back rest from the car, thus opening the rear clear to the trunk. In this way I was able to move five hives at a time, but you may be sure that the hives were well nailed and screened. Cool weather helped too.

Because mine is a hobby I keep the hives within a hundred feet of the house. It is a rare day when I don't walk out to look them over, and to adjust the front entrances to fit the weather. Yesterday, March 15, they were out in large numbers and were bringing back either pollen or propolis on their legs. They have wintered well with protection on three sides and the top, but open in front to the sun.

Hanover, Mass.

KEEPING ANTS OUT OF HIVES WITH DDT

By Charles J. Koover

If hives are located on stands or benches ants can be kept from invading them with the use of DDT. Just paint the legs with an insect spray containing 5 percent DDT by weight. Ants won't cross is for months on end. Rain won't wash it off or lessen the effect. Few bees ever crawl up the legs of stands or benches so will not get the DDT poison on their foot pads. Use a brush and paint it on—don't spray it on. I have tried it for a long time now and what a relief to the bees. The Argentine ant is a nuisance here on the Pacific Coast and no doubt is in all the Southern part of our country.

Altadena, California.

SECOND GLANCES

By C. M. Isaacson

Manipulation at the right time is often the difference between a honey crop and a failure for the season, so delicately balanced are the scales for a season. (Page 257). Ten pounds of feed when it is needed, a new queen given just when the old one has failed, room given **before** the desire for swarming has developed—all these and many more seemingly small items can any one make the difference. Mr. Morse has a lot of pertinent advice in his remarks.

Simplified beekeeping might be the title of W. H. Dicks' article (page 260). And it is simplification that we all need. As we grow in experience, we can find out much without opening the hive, and I suspect we sometimes examine further even when we know it is unnecessary. Why? Just because it's "fun" probably. But when trying to handle more bees with the same amount of help (seemingly less time) we need to practice the points mentioned. May I add an item to the words on telling queenlessness by bee behavior at the entrance? Watch for pollen carriers. If they are few and in not "much of a hurry", look inside. It's old advice, but still good.

Honey for wound treatment is not a new remedy — it has long been recommended in home treatment. But scientific reason for the assistance it gives in the healing is interesting to read (page 261).

Honey on the move seems to be the rule in California. As Clarence Tontz says, it is hard work and hard on equipment, but there also must be a certain fascination in being able to "guess right" on the flow and weather and get that crop. The pictures included in the article are very good. But propolis is not only bad in the West, Mr. Tontz. Here we also must scrape — or leave out a frame in time (page 262).

"The impossible takes a little longer." That quote from one of the Army Engineer Corps maxims might well be Mr. de Griaznov's also. It both thrills and makes one ashamed at one's own able-bodied inadequacy to read his account of caring for 700 colonies without the use of sight. It truly is so that nothing is impossible if you will, and shows once more that the spirit is stronger than all else (page 265).

The sulfathiazole account continues (page 268). Mr. Nieb's article in this May issue gives the treatment quite a favorable report. And he is giving it quite a severe test. But in connection, read the item contributed from R. H. Kelty on page 291. No one likes to be a "killjoy", but his words of caution are timely and wise. I might mention along with this that our Minnesota bee inspection division has sent out a letter of similar "go slow" advice.

Some "not-to-dos" on swarm prevention can be found in Propolis Pete's May contribution, spiced with the usual welcome dash of humor. Several items are extra worthy of a second glance. "Bee fever too strong to be discouraged." That's too true so often! And don't fuss too much in your efforts at control — it may defeat the ends you seek. Don't spread brood — well, many of us have found that out. But as to queen clipping — here's a believe it or not item. I clip many between the fingernails of thumb and forefinger — the wings only, not the queen! Try it sometime.

Bees free agents? No, Mr. Latham, I believe you had better think that over. The powerful hand of instinct is too evident for me to accept that. In some not evident fashion, that is behind the seeming mistakes the bees often make, such as supersedure of a good queen and vice versa —this blind following of a controlling power. But the means for distinguishing between supersedure and swarming preparations — it is true that only a very few cells are built in the former case, and usually of varying ages (page 274).

Nosema is increasing. Why? It seems that often a disease will be of little moment for many years, and then in a comparatively short period of time present an alarming threat. Is it as some scientists believe to be the case in human disease — that the causative agents develop virulency and ability to overcome what has hitherto been resistance? Whatever the reason, it is none too early to conduct real research on this threatening disease (page 282).

80 Years Among the Bees

By E. R. Root

"Him that tooteth not his own horn, the same shall not be tooted"

Ordinarily it is not safe for one to toot his own horn—better let the other fellow do it. However, since he hasn't done it, I will take my chances. There is interesting apicultural history in 1890-1900 that is important and I wish to bring it out at this time even at the risk of placing myself in the spotlight of tooting my own horn. Now that the truth has been established it should be set before the public.

In some of my late articles I have been talking of the mistakes that have been made in beekeeping practices (some of which I made) in order that in the future we may not fall into the same errors. So far we have paid our respects in no uncertain terms to the folly of the Dickel theory, the pollen theory, and excessive contraction built on false bee behavior, and last of all, the futility of reversing. As I shall show, I stepped on the other fellow's toes, and he howled back.

It is now important to look forward as well as backward. My first toot, over 50 years ago, was against contracting the brood nest but for building it up stronger for better colonies for the harvest. This means breeding in two hives of Langstroth dimensions rather than in one, which in earlier days was thought to be sufficient in size to take care of a good queen.

While I was probably not the first one to advocate two eight or ten frame hive bodies (Langstroth dimensions) for a brood nest and while I was not the first to advocate that two of such brood nests of bees would winter better and swarm less, I wish to show how I continued to advocate double brood nests for summer and winter, from 1894 to the present century, in spite of the loud tooting in opposition from nearly all of the leaders.

Hives, Eight or Ten Frame

From 1890 on to the very beginning of this century, the journals were filled with discussions on the proper size of a hive as a single unit. Langstroth started out with a hive to hold ten frames, twice as long as deep, making what was supposed to be a brood nest sufficient for the capacity of a good queen during the summer and winter. Then came the comb honey era, and the question arose as to whether the eight frame Langstroth hive would not be better. It was argued that the two outside combs in a ten frame hive would be filled with honey and pollen and that therefore the bees would not build section comb honey over combs of honey but would build directly over the frames containing brood.

Later on in the early part of the present century the discussion favored the ten frame hive because we were then moving into the extracted honey era. It was believed that more extracted than comb honey could be produced. We were coming on toward the first great world war.

When Langstroth brought out his movable frame hive along in the 50's, Quinby did not immediately accept such frames, but in 1865 he adopted the bee-spaced frame, the dimensions of his frame being 18½ inches long by 11¼ inches deep against Langstroth's frame of 17⅝ long by 9⅛ deep. Quinby's first movable frame hive contained **only eight combs**. Charles Dadant was the first to point out (in 1885) and prove that a larger hive would be better, and after he adopted the Quinby frame he used eleven of them to the hive, believing that it would mean more brood and more bees and more honey, and he was right (see Gleanings for 1895, page 160, also C. P. Dadant's series of articles in Gleanings for 1898, beginning on page 682).

The Dadant's Pioneer Work for Big Colonies

It was the success of the Dadants with the large brood nest in one single unit that drew my attention. They produced big crops of honey with only two percent of swarming. Comparative tests later proved to me that a single Langstroth brood nest (ten frame) was too small to take care of a good queen. To urge the industry to drop the old Langstroth equipment would be too expensive and impossible. At the time

we were using Langstroth eight frame hives. Why not use two such hives for a brood nest? The very first season's use of the double story showed an increase in bees and honey.

A. I. Root got a barrel of honey from one such double brood nest. He attributed the yield to the queen and not to the brood chambers.

I became satisfied at the very beginning of this discussion that by raising big colonies that could occupy Dadant hives of eleven frames or better, a colony a little larger that could occupy two eight frame bodies would produce more honey than a single unit of either. In favor of the eight frame brood nest, double story, the following is what I had to say as early as December, 1894. (See Gleanings for 1894.) This was my first toot 50 years ago:

It was a little confusing to read over the diametrically opposing experiences of some of those who have written on this question but one thing seems to be coming out and that is that beekeepers have been, for the most part, trying to get along with too small brood nests, and it is possible that this may partly account for the poor honey crops of late. While some think a ten frame hive is the thing, and large enough, from the evidence that has been received, and from my own experience I am coming more and more to believe that while ten frames give slightly better results, a twelve or sixteen frame brood nest would give still better results. I may be wrong but in my own mind I have decided that inasmuch as the eight frame size body full of combs is not too large to lift, two stories of this hive will give a brood nest ample for all purposes and all seasons. Then in poor seasons and with poor queens or with poor localities one of the eight frame bodies may be quite large enough. Hence, I have favored and still favor the eight frame size for hive bodies. A couple of valuable articles will be found in this number on this subject.

Also Gleanings for 1897, page 563:

I have said a great deal regarding the advantage of large colonies being non-swarmers, and the kind that produce honey. Experience this season, as well as last, has pounded the fact into my head more firmly than ever before. The Dadants have long been exponents of big hives and big colonies, and while I believe they are exactly right in urging the importance of having powerful stocks of bees, I am not yet prepared to believe that a large hive all in one brood nest is essential. During the past season we have secured largely the same results as do the Dadants with our two story eight frames; namely, no swarms and 100 pounds of extracted honey on the average per colony and 50 pounds of comb honey. The single eight framers swarmed, and in some cases gave us 25 pounds. Hard facts and figures like these are worth a bushel of theories. In addition to the two story colonies, we have a few three story and one four story; the last named holds two big swarms. If they had been in the outyard instead of in the home yard, which is greatly overstocked, we should have secured some results.

Again, in Gleanings for July 1898:

In several issues of late it will be remembered I have had much to say upon the value of two story colonies as against one story; that the former would not only secure more honey, either comb or extracted, but were very much less inclined to swarm.

I continued this line of argument from 1894 on to the beginning of the present century, arguing that it was the strong colonies that would get the crop of honey, against the opposition of my friends who were advocating the single story colonies, especially the Heddon sectional hive system. Intensive agriculture, they argued, had crowded out all clovers and therefore if we wanted to produce any honey at all we had to contract the single brood chambers down to five frames in order to squeeze what little honey there was into the supers.

(to be continued)

DR. ABUSHADY TO COME TO AMERICA

Dr. A. Z. Abushady

Dr. A. Z. Abushady, former editor of the Bee World, and recently on the faculty of the University of Alexandria, Egypt, is coming to the U. S. A. with his family to reside in New York City, for the time being at least. We hope to meet Dr. Abushady and we know those affiliated with our industry will want to meet him, if possible. We hope to give his New York address later so that beekeepers may get in touch with him.

From North, East, West, and South

NORTHERN CALIFORNIA, May 4

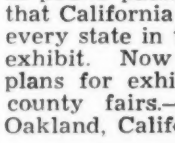
Weather: The weather for the past month has kept beekeepers guessing. From five reports we received no two alike. California has many kinds of weather, most of which is fine. Here in the Bay Area the honey flow from eucalyptus is at its best. It is a long season and a slow flow giving all a chance to put their colonies in good shape for the next flow; also plenty of time for the beekeeper who complains of the weather. We have much the same weather every year and at the end we have a crop. The papers tell us we have had the driest April in 15 years. The beekeepers who moved to the almonds and fruit blossoms for a start say the weather and blossoms were the best in years. From all the reports we seem to have a good start for the season.

Condition of Bees: Before this is in print we will know more about how many are ready for the honey flow. California has many flows, and some are past. Some who claim to be beekeepers miss them all. There is more of an effort to be ready this year. Swarming, where there was no effort to control it, has been bad. The plans beekeepers are making to increase their production of honey and wax cannot help benefitting them in many other ways. One of our beekeepers who has kept bees for a long time never thought it worthwhile to help his bees to build up ready for the honey flow instead of letting them build up on the flow. However, in his effort to increase production this season, he prevented swarming and at this early date has extracted 100 pounds per colony of eucalyptus, and his bees are in good shape to get another crop. He will move to the alfalfa in May and later to the star thistle. He will increase his crop at least 100%. This may be too much for each of us to do but we can all do some by a little more study.

The bees in Santa Clara Valley have had a good season so far.

Miscellaneous: At the World's Fair on Treasure Island in 1939 and '40 the California State Beekeepers' Association had one of the best exhibits of bees and honey in the Farm Products Division. We have a medal from the governor to show for it. The exhibit was attended by members of the Alameda County Beekeepers' Association. The second year they were allowed to sell honey in pound packages. The result was that California honey went to nearly every state in the Union. It pays to exhibit. Now is the time to start plans for exhibits at the state and county fairs.—Cary W. Hartman, Oakland, California.

SOUTHERN CALIFORNIA, May 2



Weather: The rains we had during the last few days of March and first days of April gave new heart to everything that grows. Farmers are getting fair crops where they had about given up hope. This applies to the unirrigated parts of the country. Even the alfilerae took on a new start and has bloomed quite profusely in some places. There has been considerable foggy cool weather during the past month. This usually was in the night but often reaching well toward noon.

Crop Prospects: We would say they have improved materially during the month. Flow from the orange has been quite satisfactory. Generally speaking, colonies were in good shape and ready to do their part in getting a crop. Orange bloom is one of the earliest we remember and is well past its best at this date in our opinion.

Miscellaneous: Movement of bees to the orange groves this year was one of the biggest ever. Up until March 25th the prospects for honey on the outside ranges were very poor. Since that date the prospects have materially changed for the bet-

ter. If the weather remains mild without getting hot, and if we should get another good rain the outside ranges should yield some honey. From orange blossoms at an elevation of 500 feet, to 5,000 feet where the oak tree is just starting its leaves, is only a little over an hour's drive and gives one a lesson in the growth of plants on the different elevations.

But it is not the scenery that interested us on May first, but a daylight start on a catch of trout. While the stream is small it had been stocked with nice sizable fish. It is quite accessible and the news had been well circulated so there were plenty of fishermen, fisherwomen, fisher boys, and fisher girls from seven to seventy. Fishing began before you could see the bait on the hook as it hit the water. There were some disappointed people but most of them got a few. It is well to get out on the opening day not only to get first crack at them and to meet many of your friends but it gets the urge out of your system for the time being.

As we drove along the highway we noticed on the lower elevations the blooming of the orange groves, Then on the same elevations, in fact, within a mile or two, black sage, white sage, and wild buckwheat all in bloom at the same time. This is something I do not remember having seen before. We saw bees working on the orange but did not see any on the other plants.—L. L. Andrews, Corona, Calif.

SASKATCHEWAN, May 7

Weather: The weather last winter for long stretches at a time was very severe but winter did not last as long as usual and with March, mild and sunny days appeared, heralding spring a full month earlier than usual.

Pollen was available in quantity by the first of April which enabled early packages to get off to a splendid start.

The fine weather we have been having this spring has not been accompanied by any rain and we are badly in need of moisture in most parts of the province. However, it is early yet and it is quite likely that this will be rectified in the near future.

Wintering: Bees benefited by the short winter and have come through in better than usual condition this spring. This applies to colonies wintered both indoors and outdoors.

Package Bees: The demand for package bees continues very heavy and more packages than usual are being imported this spring, indicating a further increase in the number of colonies in Saskatchewan this year.

Honey Market: The market is, of course, bare or practically bare of honey and the crop has moved with a minimum of trouble because of the heavy demand. This demand is expected to carry through at least next year as there is little indication that sugar will be more plentiful and therefore it is highly likely that honey will continue on the ration list through 1946 and at least part of 1947.

Miscellaneous: At various times in the past few years, beekeepers have had difficulty in selling their honey, but as far as I know, nothing has ever been done by the beekeepers to improve the market for their product. It is, therefore, most encouraging to find that Canadian beekeepers are now organizing under the Canadian Beekeepers' Council to do something positive to improve the future honey market in Canada. In the first place, they are planning to greatly improve the grading and packing of honey in Canada, so that the customer will be able to buy with much greater confidence than he can at the present time. Then, to give him the desire to buy honey and not some other product, a Canada-wide advertising campaign is being planned from funds raised from beekeepers themselves who are taxed through a levy which they pay on honey containers. There is every indication at this time that the plan will be successful, and if it is it will be one of the greatest forward steps the industry has taken in this country in many years, as we are confident we can develop a demand which will take our total production without difficulty.—R. M. Pugh, Fort Qu'Appelle, Sask.

VERMONT, May 4

At this time of year, those of us not yet tempered by experience make bold predictions about the coming season's clover crop. While it is possible within certain limitations to forecast failure by lack of clover in spring, any other forecasts are of course just plain guesswork, upon which it is foolish to try to base one's operations.

To be always ready for a bumper crop is still the best forecast to use in planning the season's operations and one we try to go by.

The spring here in Vermont so far has been something like last year. All of March, while we were away in Florida, the weather was warm and springlike as the month of May. Naturally bees started to build up, buds started to swell, and for a week after we got back we clipped queens under almost ideal conditions at the end of March when queens are easy to find. Bees here have wintered very well as we had a fairly mild winter and have been in good strength right through. With the coming of April, cold weather has held all growth to where it was a month ago. Elms that bloomed a month ago are still in bloom now on May 4th, and weather is still cold with heavy frosts. With a warm March starting off brood rearing with a bang, and April so cold that bees couldn't get out, there is but one result—feeding. As bees are very strong, it is taking plenty of feed.

The bright side of the picture is that maple, dandelion, and fruit bloom are all ready to pop open as soon as the weather warms up instead of bad weather during bloom as was last year. We hope they'll get enough spring flow to last until the clover flow.

While it has been rather dry this spring, there is lots of water in the ground. Clovers don't look as plentiful as last year but should be enough to make some sort of crop. The past three years' crop has been average, and perhaps it's about time we had either a bumper crop or a failure.

We are praying for a bumper crop this season. With the large pent-up hunger and demand for honey since it was sold out last December, it will take a lot of it to supply even our normal demand. And again it will take the wisdom of King Solomon to divide what crop we do get, equally, and keep all our customers happy. Conditions like this no doubt are best as far as financial returns go, but I sometimes think in some ways the depression days were better. It was easy then to give people all the honey they wanted.—Chas Mraz, Middlebury, Vt.

IOWA, May 6

Weather: The best news I have to report is that this part of the State had about two inches of badly needed rain. It fell over a period of two days and nights and all went into the ground.

Crop Conditions: The hay crop will be somewhat short as we have had the driest April for some time, but the clovers went through the winter well. While they may not be so rank in growth beekeepers may harvest a good crop of honey if showers continue when needed. Any beekeeper of experience has seen times when more honey was gathered by the bees when the growth of the clovers was not so rank and sappy. However, the outlook for a crop of honey at this time is not discouraging. With the proper weather conditions from now on there should be a good crop of clover honey again this year.

Condition of Bees: Bees should have wintered well as the winter was mild and if the bees had plenty of good winter stores there should not have been much winter loss.

The spring has been kind to the bees as weather conditions have been such that they could fly nearly every day when the dandelion and fruit bloom was out, and they have improved the time. Much different from the past two years when the weather was so cold they lost nearly all of this pollen and nectar which is so vital to their building up in strength in the early spring.

Market Condition: There seems to be no scarcity of honey in the market as yet. Most grocers have both comb and extracted in ample quantities to supply the trade. I noticed the other day one grocer had

a larger supply of comb honey than any I have seen at any time since last year's crop came on the market. Nice plump sections and put up in fine shape. It was selling at 29c per section. I wondered why the beekeeper held comb honey this late. There is not much change in prices since my last article. On special sale day one merchant was selling 5-lb. pails of amber honey for 99c, but two days later it went back to $1.09. While there seems to be little change in price one notices the quality of the honey is not what it was earlier. Of course, as usual, the whiter honeys sell first.—W. S. Pangburn, Marshalltown, Iowa.

KANSAS, May 8

Weather: Since February, the temperatures have been abnormally high and, accompanying such temperatures, the weather has been dry. During the last week of April and the first week of May, the temperatures have been somewhat near normal and at times in the low 40's, which influences considerably the flight of bees when plants are in bloom.

Plants: White clover, yellow and white sweet clover plants have made good growth in eastern Kansas. White clover began blooming early in April, and yellow sweet clover began blooming the last week in April. This time of blooming is fully four weeks in advance of normal. During the past week, bees have visited white clover and yellow sweet clover when temperatures have been warm enough for bee flight. Early white sweet clover plants have begun to show white in preparation for blooming.

Colony Conditions: Colonies have been building up to peak strength since sometime the latter part of February. They have been using stores which normally would be used during May. Swarms have issued from colonies, beginning about the middle of April, and under unfavorable conditions for active colony growth. The cool weather of the past two weeks has restricted the swarming conditions, which will be helpful to the beekeepers, but only for the period of the cool weather.

Miscellaneous: There is continued interest on the part of the public in regard to establishing colonies of bees in an effort to provide a source of sweet to supplement the restricted sugar supply. Inquiries in regard to this year's honey crop are quite numerous. This is an indication that the current crop of honey probably will be exhausted soon after it is produced.—R. L. Parker, State Apiarist, Manhattan, Kansas.

TEXAS, May 7

Weather: The first half of April was rather warm with near summer temperature prevailing. The latter part of the month was somewhat cooler and brought considerable rainfall to most sections of the state, with excessive rains in some areas.

Bees and Plants: The season was very favorable for queen and package bee production, without any interruption by cold weather, usually common during the early part of the shipping season. Colonies had built up to good strength and were in prime condition for the honey flow. Considerable swarming was reported.

The lower Rio Grande Valley had a prolonged citrus flow with production somewhat below average. In most sections the honey flow came earlier than usual. Southwest Texas enjoyed a good honey flow from guayacan, guajillo, catsclaw, and mesquite, although some of these sources failed to bloom in some localities. Mesquite failed to get seed from the early bloom in most areas, and another bloom may be expected in June, at which time mesquite is usually a reliable nectar plant. Whitebrush has flourished since the heavy rains and is now blooming in abundance and colonies are making some gains from this shrub. The eastern portions of the state received a heavy flow from youpon, and at present horsemint is beginning to yield.

Crops: Colony yields from 50 to 100 pounds have been reported. Some extracting has been done but many outyards remain to be extracted. Beekeepers have difficulty in hauling from the outyards since the rains. Buyers are active and Texas honey is again on the market after an absence of several months.

Miscellaneous: Beekeepers are again reminded that the annual meeting of the Texas Beekeepers' Association will be held at Greenville, Texas, June 10 and 11, and promises to be the best state meeting in many years. An excellent program has been prepared, including a number of out-of-state speakers. The committee has left nothing undone to make the meeting both instructive and entertaining.—A. H. Alex, San Antonio, Texas.

NEW MEXICO, May 12

Weather: It was hoped that a good spring rainy season would develop along the watersheds of the Pecos and Rio Grande to bolster the present very low water reserves, but to date this has not occurred.

Condition of Bees: Colony conditions are very good because of early sources of nectar and pollen brought about by an early spring. The good colony conditions now in general over the state can change quickly to an acute feed shortage unless we have good rains soon. The mild winter has not been as hard on colonies as would be expected.

Market: All of the '45 crop is out of producers' hands and the demand continues very active at present. Indications are that by new crop time the demand for honey will be the best it has been to date in this state. One large packer has been the busiest in several years keeping packaged honey before the trade which is unusual at this time of year.

Miscellaneous: Several of the larger producers have been increasing their numbers of colonies. This would be a real benefit to beekeeping in general in this state as it seems that the greatest trouble with foulbrood has been arising in recent years from the small beekeeper, or rather the beginner in beekeeping. In the past 18 months several beemen have informed me that new outbreaks of foulbrood have occurred at some of their yards and in nearly every instance it can be traced either to a beginner who does not understand it as yet or to some small beekeeper who became too busy to care for his few hives and allowed them to contract the disease and then be robbed out. This comment is not to infer any laxness by the inspectors, for just the opposite is true. Our inspector is not only doing a better job, but on the whole the disease is far more under control than it was five years ago. While inspections dropped during the war years, diligence on the part of larger operators helped hold the line until state inspections were again available. Our state honey inspection law has been a very worthwhile step forward for both producer and consumer in New Mexico. It is my personal belief that such measures go a lot farther in controlling foulbrood than we ordinarily give them credit for.—Clifford A. Baltzley, Pecos, New Mexico.

ONTARIO, May 6

Weather: In many ways the present season here in Ontario is quite similar to that of a year ago, and in other respects quite different. A year ago, March and April were quite warm, and fruit bloom, dandelion, etc., were open in April. The cold weather with heavy rains set in and lasted during half of May, the bees getting nothing whatever from all spring bloom. Results were that stores were used up and wholesale feeding was necessary to keep the bees alive till clover opened. By that time most colonies were weaker than they were in early April. We all know what a small crop of honey was secured in most of Ontario.

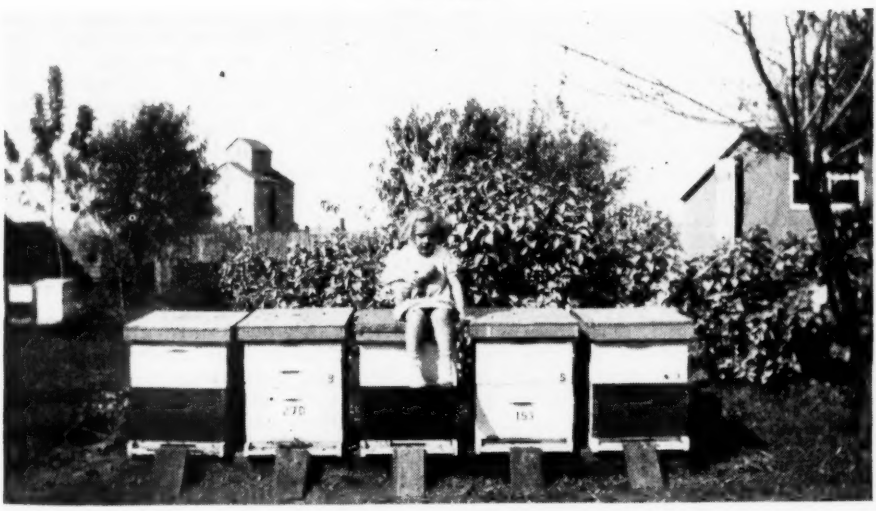
This year we had unusually warm weather in March with temperatures reaching to 80 degrees, breaking all records at our meteorological office in Toronto. Bees got a tremendous boost from the early pollen and a little nectar that came in early, and at that time all colonies were seemingly heavy in stores. But April this year has been unusually cold, and instead of so much rain as we had a year ago we have not had half an inch of rain for the past two months. Willows are now open and fruit buds just ready to show if the weather gets warm. Today it is very cool with little hope of warmer weather for a day or two. In the meantime, many colonies are getting short of stores and naturally we do not view the situation any too optimistically.

However, we cannot help out in weather conditions so must prepare to make the best of it. Cool weather and lack of rain has held back clovers, etc., but with lots of moisture and warm weather during the next two weeks, a great transformation could take place.

Condition of Bees: We have purchased our usual number of packages, mostly used for making up any winter losses which this year were largely in the way of queenless colonies.

Miscellaneous: For 18 years we have had the bulk of our packages from one shipper and in all that time we have had perfect satisfaction with never a jarring note to mar our business relations. Have also bought bees from some other shippers and we wish to say here that we have found the bee shippers of the South generally fine men with whom to deal. After getting packages during the last 20 years that would run up into the thousands in number, we would hesitate to give any advice that would apply to all cases, in the way of placing bees in hives, etc. For instance, most shippers and others advise feeding packages heavy on arrival. If bees arrive in good shape, as ours invariably do, with plenty of syrup in food tins, we do not feed them, but put them in the hives as soon as possible. If we could choose the time of day for this work, certainly it would be in the evening. In feeding packages it is hard to keep from having the cage mussed up more or less, and if packages are taken to an apiary in the daytime when no nectar is coming in, one is certainly inviting trouble. No other way would cause so many queens to be balled. If there is any sign of robbing going on in an apiary, under no circumstances put packages in at the same time.

On page 273, May Gleanings tells how Mr. Pease keeps birds away from his berries, etc., by hanging a great horned owl in a tree. This reminds me of how we are using a similar owl for another purpose. Nearly 50 years ago we shot a great horned owl and had it mounted. Up till about five years ago this bird was in our house, and in the course of all these years it got quite dusty and a bit moth eaten, and so disreputable in appearance that Mrs. Byer said he had to go. We have to thaw out meat each day for our mink, and sparrows, starlings, and other birds would want to feed on this meat. So each day this antiquated owl stands near the large tin that holds the meat while thawing, and that ends all trouble from that source.—J. L. Byer, Markham, Ontario.



Beekeepers teach their children not to fear the bees.
—Photo from Alfred P. Johnson, Rankin, Illinois.

Talks to Beekeepers

M. J. Deyell

June is a wonderful month, not only for humans but also for bees, especially in the North. The long days give bees a chance to put in some overtime, especially if the weather is favorable for nectar secretion.

As was brought out in an article appearing recently in Gleanings, by Mr. Braun of the Experimental Station at Brandon, Manitoba, that the longer daylight hours in the North and the rapid growth of vegetation as a result of the sunshine, may account in part at least for the larger crops secured in the North.

Various Methods of Installing Packages

Beekeepers have developed a number of methods for putting bees into hives. Some methods are better than others. A few days ago I helped install some packages in an out apiary. The method we used worked so well that I shall try to describe it.

We have some shallow division board feeders that fit a shallow extracting super. Each feeder holds a quart of syrup. The opening for the feed is mortised out of solid wood so that there is no danger of the feeders leaking. When the regular deep division board feeder is used it may spring a leak occasionally.

The day was ideal for installing packages. The weather was somewhat cool with very little sunshine. We placed a shallow super with four shallow division board feeders, two on each side on top of the hive that was to receive the package of bees. Each package was wet down thoroughly with water. The bee shipping cage was opened and the bees were dumped out on top of the frames in the space between the feeders which, of course, were filled with syrup previously. The bees were so wet that they did not fly around. In some instances when we removed the candy from the hole in the end of the queen cage the queen crawled out and ran down between the frames of the brood chamber. As a matter of fact, we do not like to have the queen liberated too soon. In some cases the bees may kill or ball the queen. We have not been back to this apiary to see how many of the queens were accepted, but there should be a good acceptance.

As we finished installing the bees a light rain came up, along about four o'clock in the afternoon. This meant that the bees would remain in the hives until the following morning and during the night would get thoroughly established. It is not often we have such ideal conditions for installing packages. There was no drifting as sometimes occurs when the sun comes out immediately after the bees are put into the hives, or when the bees are not thoroughly gorged with syrup before being put in the hives.

Some make the mistake of placing the hives too close together. This usually results in bees drifting from one hive to another. I recall seeing some years ago a large number of hives, about 600, placed quite close together in a clearing. All of these hives received packages that were hauled from the South. The hives were to be moved to permanent locations later.

Even though packages were put into these hives late in the evening, the following morning there would likely be considerable drifting, especially if the sun came out early in the morning. The bees would rush out and not being able to find their own hives would naturally drift into other hives. The interesting thing is that the bees usually enter hives where they see the most activity. Such hives are packed with bees, whereas other hives nearby are likely to be depleted of bees.

Bees Build Cells Quickly

That same day we had an interesting experience in finding queen cells. The previous day had been

very hot, in fact the mercury got up to 85°. Nectar was coming in quite freely from fruit bloom and dandelion. In one apiary practically every colony had queen cells started. Quite a number of colonies had eggs in cups and some had cells about ready to seal. It is remarkable how quickly bees will start preparations for swarming when the weather gets real hot and when nectar begins to come in. Of course, there was an abundance of pollen as well.

This has been a very peculiar spring, as beekeepers know full well. We had a few colonies starve. It was a sickening sight to open a hive to find the bees almost lifeless, quivering, about ready to pass out for the want of food. We also found a few colonies that still had some life but were about ready to die. We poured a little warm syrup over the tops of the frames. In a short time the bees revived. Such a condition does not help a colony. In fact, the colony is set back and brood rearing is practically abandoned because of the shortage of food.

Are The Seasons Changing?

It is possible we are experiencing some change in seasons. An item in the newspaper the other morning said that we are due for cold summers during the next fifty years.

In this vicinity we have had very cold weather during the latter part of April, in fact, a great deal of the fruit has been killed. If this cold weather should continue during the summer, we may not secure much surplus honey. Time will tell.

It Pays to Have Queens on Hand

Quite often during the first checking of bees in the spring, queenless colonies are found. One can usually detect the queenless roar of the colonies. In some instances we have been able to introduce the queen to the queenless colony by turning her loose on the combs. However, before releasing the queen on the combs, we placed the queen cage on the comb, laid flatwise. If the bees surrounded the cage and tried to sting the queen through the wire screen, we knew that we could not release the queen. If, however, the bees encircled the queen and tried to feed her through the wire screen, we knew that the queen would be accepted, so we turned her loose on the combs and then placed the combs down into the brood chamber.

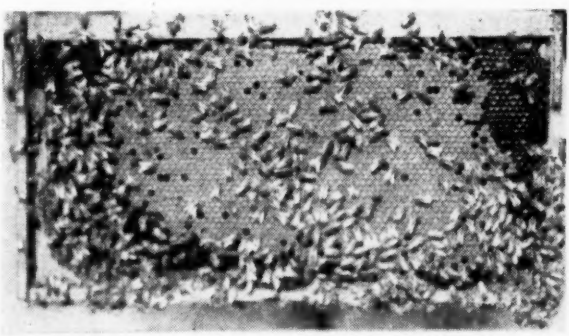
This colony with bees clustered at the entrance needs more room or another super.

One Method of Keeping Queens Fresh

Some years ago, when it was necessary to keep queens for a time, we used to have them die in the cages. We finally ran onto a method of putting new attendants into the queen cages which has worked very well for us. Here it is:

When practically all of the attendant bees have died, the queen is removed from the cage and put into a

(Continued on page 370)



A comb with fresh pollen —see lower left corner —brood in all stages, but mostly sealed, and young downy bees.

Editorials

Remember to check all strong colonies from now until the main honey flow to see that none of them starve.

Million dollar rains have been pretty general over the northern and eastern sections of the United States. They came following a severe drouth in time to save white, alsike, and Ladino clover, and there is a possibility we may get a bumper crop this year. No one knows.

Many enthusiastic letters endorsing the use of sulfathiazole for the treatment of AFB have been received at this office. It is only fair to state, however, that words of caution have come in also against shifting too quickly on a large scale from the orthodox method of handling AFB. It is important that the sulfa treatment be thoroughly tested by competent beekeepers and scientific men so that its value may be quickly proven and its limitations known. Results so far appear very encouraging, where the infection is not too severe. Complete reliance at this time on too large a scale might prove disastrous should the drug, for some unforseen reason, fail to prevent a recurrence on a large scale in the future. See May Gleanings, page 267, showing how to prepare the drug for treatment, and also page 291, praise and caution from a scientific man, R. H. Kelty, of Michigan, who is a beekeeper on a large scale.

Honey for Wounds Honey has been used during the ages as a dressing for wounds. Dr. Bodog F. Beck, in his book, "Honey and Health", makes references to honey used for wounds also skin troubles, burns, and ulcers.

We learned recently of a mother who accidentally dropped her infant into a pan of hot water while bathing it. Being the wife of a beekeeper who had a tank of honey in the basement, the woman rushed the infant to the honey tank and submerged the baby in the honey. Suitable dressing was applied over the honey. It was reported that the child recovered in remarkable fashion.

It would be well to have a container of honey handy in case of burns or wounds. Honey does appear to have curative qualities.

Don't Feed Bees with a Teaspoon It has been necessary this past spring to feed—in fact, feeding may still be necessary before the major honey flow begins.

We have found that it doesn't pay to give a strong colony of bees a small amount of syrup. This is only an aggravation. As Jim Starkey, of Indiana, says in his April letter to beekeepers: "If you are going to feed any sugar syrup don't do it with a teaspoon."

As a matter of fact, it frequently takes more than a quart of syrup to get a large hungry colony filled up. It is amazing how much syrup the bees will take when they are empty.

We have made it a rule this past spring to feed not less than ten or twelve pounds at one time, unless some colonies are understrength and need less.

Farmers and Fruitgrowers now Asking for Bees Some years ago it was somewhat difficult to find suitable apiary locations or sites for bees. Farmers were deathly afraid of bees and some wouldn't have a bee on the place.

Conditions have changed recently, due in part at least to the unusual amount of publicity that has been given bees and honey through the press and government bulletins and circulars.

At present it isn't uncommon to have farmers and fruit growers ask for bees. In fact, some implore us to place hives of bees near their orchards and clover fields.

In regions where red clover is grown for seed on a large scale growers are paying rentals on bees supplied for pollination. The farmers must have the bees to secure maximum crops of seed.

It used to be common practice to pay farmers for apiary sites. At present farmers offer locations for bees free of charge, and this is as it should be. In fact, the farmer and fruit grower should pay the beekeeper for bees, because they in-

crease fruit and seed production and are really indispensable.

Under present conditions the commercial beekeepers should have little difficulty finding suitable locations for bees, but there are still many farmers who need to be educated to the value of bees for pollination.

It should be noted that the honeybee is the only pollinating insect that can be obtained in sufficient numbers or units and moved to the desired locations for doing the pollinating work. This fact alone puts the honeybee in a class by itself.

Sugar for Bee Feed It has been reported that some beekeepers have had difficulty in obtaining needed sugar to feed to package bees or to tide over weak colonies until the nectar flow is on.

As mentioned on page 223 of the April issue of Gleanings the proper procedure is for the beekeeper to file application with the nearest district office of O.P.A. He will be entitled to 10 lbs. of sugar for each colony or package of bees. Should this 10 lbs. prove insufficient for the year additional sugar may be obtained by applying to the local AAA office who will make an investigation and if satisfied will grant additional sugar. It becomes apparent that some of the local AAA offices are not thoroughly informed as to their authority in this matter and some are not acquainted with the importance of bees to the food production. Where this is the case the matter should be referred by wire immediately to Mr. Harold J. Clay, of the Department of Agriculture, Washington, D. C.

"Honeybee Most Important Alfalfa Pollinator" The following, taken from the 1945 report of the Bureau of Entomology and Plant Quarantine, is significant: "Cooperative studies on alfalfa pollination in Utah gave further proof that the honeybee is now the most important pollinating insect of alfalfa in the state. Although the Megachile bee is of prime value as a pollinator of alfalfa, this insect was found to be so widely dispersed and so little concentrated in any one area that its collective efforts can not be depended upon for pollinating the commercial alfalfa seed crop.

"Nornia, another bee effective as an alfalfa pollinator was found in abundance only near its nesting places and so is not important throughout any wide area. This is unfortunate for the honey producer, because on occasions Normia trips alfalfa blossoms so rapidly and consistently as to deprive honeybees of a chance to collect nectar, since the latter can gather nectar only from untripped blossoms."

Beekeeping by Epochs The progress of American beekeeping seems to go by epochs. First, in 1852, came the Langstroth movable frame hive. Later, in 1857, came comb foundation which was not perfected until later when A. I. Root brought out his product in 18-75. Then came the bee smoker, first introduced by Moses Quinby, 1877, perfected by A. I. Root, and L. C. Root, a son-in-law of Quinby, 1878. Then came the section honey box and the era of comb honey, and finally the production of extracted honey on a commercial scale.

Contrary to general belief, it was the Senior Chas. Dadant and later his son , C. P., and not Moses Quinby, who were the first to exploit the advantages of a hive larger than the ten-frame Langstroth. See a series of articles by them in Gleanings as early as 1898. That they advanced a new epoch in the middle 80's of beekeeping is pretty well proven now and we will have reference to it later on. The large hive or the double brood nest paved the way for less swarming, larger crops, and better wintering. (See page 342.)

As we shall show later on, Charles Dadant, the founder of Dadant & Sons, and later his son, C. P. Dadant, eloquently argued in 1898 in favor of a larger brood nest and against considerable opposition of the leaders of that day.

The National Federation of Beekeepers' Associations that is doing such excellent work in helping to solve some of the beekeepers' problems in reconversion should not be forgotten in our busy rush in getting a crop. (See page 332.) Those who have not already alligned themselves with the organization should do so at once. Send your pledges or remittances to Glenn O. Jones, Secretary, Atlantic, Iowa.

Bees, Like Crooks, Like Darkness Rather Than Light

Recent discussions between Allen Latham and E. R. Root, where the former argued for shipping package bees in the dark, have brought out quite a bit of interest. Numerous cages have come to our office, most of which are altogether too heavy for shipment; a few of which ignored the basic principles set forth by Mr. Latham, the combination of darkness and limited ventilation.

Dr. W. E. Whitcomb of the U. S. Bee Culture, Baton Rouge, La., while admitting that darkness is an important factor in the shipment of bees, summed up the situation in this way:

Bee shipping cages with wirecloth sides and ends are delivering bees in good condition. Wirecloth makes a cage lighter than anything constructed of wood, reducing express charges proportionately.

But one point has been ignored by all—when bees are shipped in wirecloth cages and can be seen at a glance by express people, rough or improper handling might let loose dynamite (stings). And for that reason, if for no other, wirecloth assures careful handling even though bees do like darkness better than light during shipment, which fact cannot be denied. Unless the weather is extremely hot and unless the bees are placed too close to a stove or radiator, they will be perfectly quiet whether in the darkness or in the light.

Evidence Continues to Pour in Showing that DDT Will Be Our Friend Rather Than Our Foe

The appalling losses of bees from the use of arsenicals, as reported from all over the country, presented a problem that was difficult to solve. Up to recently nothing seemed to be as effective as arsenic mixed with other poisons in the form of a spray or a dust. In either case a rain would wash off the poisons making it necessary to apply fresh amounts of arsenate of lead, and often there seemed to be no hope in sight until recently, and that hope came from the most powerful insecticide the world has ever known. Strange as it may seem, it is apparent from the evidence at hand that DDT will, to a large extent, displace the arsenicals that have been causing the awful destruction of bees, sometimes resulting in controversies and lawsuits between beekeepers, farmers, and fruit growers.

At the very beginning, Gleanings has expressed the hope and belief that this new insecticide, DDT, the most powerful so far known, would prove to be a blessing in disguise. Late work in the laboratory and in the field is piling up showing almost conclusively that both the horticulturalists and the beekeepers will welcome the use of DDT. While it will kill bees when confined in cages or in beehives, either in the form of a spray or dust, it has now been pretty well proven that DDT, when properly applied, **under field conditions,** is far less destructive to bees and other pollinating insects than the arsenicals which require frequent applications to make them effective. Earlier reports of last year and of this year concerning DDT are all favorable **without a single failure,** so far as we can discover, when the chemical is properly applied. Tests made last year by Dr. Edward Gould, West Virginia Experiment Station, on 800 acres of orchards, operated and owned by the Consolidated Orchard Co., were entirely successful. The Eastern Fruit Grower, December, 1945, said the results were little short of a miracle.

The Geigy Co., Inc., 89 Barclay St., New York City, originators of DDT insecticides, has sent out a circular which can be had for the asking, quoting from agricultural papers and other high authorities, proving that DDT in field use does not kill bees and yet is the most effective in destroying noxious insects.

In further proof of all this, the reader's attention is drawn to the reports in a recent paper by Dr. W. E. Dunham, Ohio State University, and published in the April News Letter of the Federation of Beekeepers' Associations, and republished in this issue (see page 332). The evidence is promising but it is apparent that directions furnished by the state and Nation should be carefully followed. Instructions given on the package of DDT put out by reliable companies usually can be accepted and followed.

Homemaking Chatterbox

By Harriett M. Grace
Director,
American Honey Institute

Summer is officially just around the corner, and it is time for homemakers to start thinking about foods that will fit into a season of warm weather and waning appetites.

The parade of this season's fresh fruits and vegetables is making the rounds, providing a tailor-made answer to the $64 question of what to have to eat. Salads is the answer! Summer and salads go hand in hand, for their succulent crispness hits a responsive note in warm weather. A huge bowl of tender greens tossed with cooked and chilled baby green limas, juicy tomato wedges, and thinly sliced radishes, is just the thing to serve with your favorite hot casserole dish. Add a distinctive touch to the salad with spicy Roquefort Cheese Dressing.

Roquefort Cheese Dressing

½ cup salad oil
½ cup lemon juice
½ cup honey
½ teaspoon salt
½ teaspoon paprika
¼ pound Roquefort cheese

Place all the ingredients except the cheese in a tightly covered quart jar and shake vigorously. Crumble the cheese into small pieces and add to the dressing. Shake again just before serving.

When you serve a fruit salad, top it with Lemon Cream Dressing.

Lemon Cream Dressing

3 tablespoons honey
1 tablespoon lemon juice
1 cup whipped cream

Combine honey and lemon juice. Add to the whipped cream. Serve on fruit salad.

* * * * *

If milady plans to go traveling this summer, there is always the question of how to seal bottles of perfume, hand lotion, and the innumerable other liquids she will need to take with her. A little colorless nail polish will take care of this situation nicely. Just apply a heavy coating around the closure. If the bottle has a cap which makes this method impractical, melt a little paraffin and dip the whole top of the bottle in it just before it congeals again. When you pack breakable items, be sure they are well padded. A good policy is to swathe them in cleansing tissue and stick them into your shoes. It is also a good idea if you are taking several pieces of luggage to carry with you the one with the breakable things in it.

* * * * *

While we are still discussing luggage, that which has been subjected to much use, and especially that which has been left to the none too tender mercies of the baggage handlers, is very apt to become marred by black tar and oil smudges. To remove these, rub a little lard or vegetable fat on the spots to soften the material, and wipe off with a soft cloth.

* * * * *

When you iron embroidered pillow slips, table scarves, or similar pieces, place them over a thick turkish towel on the ironing board, and iron the embroidered parts on the wrong side to avoid catching or pulling the threads.

* * * * *

Now that school days are over until fall, the children have plenty of opportunities to get into mischief, which is apt to be very hard on their clothes. If they manage to get paint on their clothing in the course of their wanderings, it can be removed by saturating the spot with equal parts of ammonia and turpentine. Repeat this two or three times, depending on how stubborn the spot is, and then wash out in soapsuds.

COLONIES STARVING BETWEEN DANDELIONS AND CLOVER

Every year, about this time, there is usually a dearth of honey between dandelions and white clover. Some colonies built up to enormous strength at the peak of their best efficiency will starve before the clover comes to bloom. Beekeepers all over the northern states should check their colonies to see that none of them starve, even in spite of a food chamber full of honey given the previous fall.

Asked and Answered

Ants Between Hive Covers

Question.—What can I do to keep ants from getting between the top lids and inner covers of my hives.—C. W. Smith, W. Va.

Answer.—If ants congregate between the inner and the outer cover, simply remove the center block of the inner cover so that the bees may get up into the space between the covers to clean out the ants. If you have not done this, you will be agreeably surprised at how quickly the bees will drive the ants out.

Salt for Bees

Question.—Is salt beneficial to bees? Seeing them around hog pens made me think they were in need of salt so I used 2½ gallon jars on chick fountains and put one tablespoon of salt to each ½ gallon of water. They seem to like that.—R. W. Nuckols, Va.

Answer.—Bees do need some salt. They usually get it in pasture fields where blocks of salt are provided for stock. If your bees get water from a creek or spring, it would do no harm to spread some salt near the water occasionally.

Queenless Colonies in Early Spring

Question.—What should be done with a colony found queenless in the spring?—James Anderson, Ohio.

Answer.—As a rule, the best thing to do is to unite it with a colony having a queen, choosing one that needs to be strengthened. You can also send South for a queen and introduce her to the colony, if the queenless colony has enough bees.

Paraffin to Keep Sections Clean

Question.—I would like some information on the use of paraffin on sections to prevent them from being stained.—J. N. Stout, Nebraska.

Answer.—After sections are in the supers and before the supers are placed on hives, the tops of the sections can be painted with melted paraffin to prevent the bees from staining the sections with propolis. The paraffin should be kept just above the melting point when it should be painted on the sections simply by dipping a brush into the melted paraffin and applying it to the tops of the sections as when painting wood.

Ownership of Absconding Swarm

Question.—If I follow an absconding swarm to one of my neighbor's decoy hives what are my rights as to ownership?—L. R. Taylor, Miss.

Answer.—The courts have held that an absconding swarm continues to be the property of the owner, even after it leaves his premises, provided he follows the swarm and is able to identify it as his property. In recovering his property the owner may be compelled to resort to legal methods in order not to be liable for trespassing.

Production of Chunk Honey

Question.—How many frames of foundation should I use in a ten-frame super when producing "sectionless" comb honey? Also should I use thin super foundation or extra thin in the frames?—J. L. Wing, Ia.

Answer.—You will secure combs that are straighter by using the full set of ten frames in the ten-frame super. If you want the combs thicker you may be able to secure fairly straight combs by using nine frames, thus saving a sheet of foundation for each super. However, great care will be necessary in spacing the frames when only nine are used in a super, since the combs are to be built from foundation. This super foundation is better for this purpose than extra thin.

Getting Comb Foundation Drawn Quickly

Question.—Can we do anything to make our bees draw comb faster? Ours do not seem to be drawing it very fast.—Frank E. McLaughlin, Mo.

Answer.—In order to get comb foundation drawn out, there must be a good honey flow. Bees may be induced to draw foundation by feeding them sugar syrup. However, there is nothing that quite equals a good honey flow for getting combs drawn out rapidly.

Moving Bees a Short Distance

Question.—How should I proceed to move bees a distance of 225 yards without having some bees return to the old location?—Acey D. Zornes, Ind.

Answer.—It is natural that some of the bees, after flying out of the hives the morning following the moving, should return to the old location. If, however, you leave no hives or anything that looks like a hive on the old location, the bees after flying around the old location should eventually return to the new location. Place some sticks or branches of trees over the entrances of the hives in the new location. The bees after leaving the hives will realize that they are in a new location and will proceed to get established. The sticks or branches should

not entirely obstruct the entrances but should make it difficult for the bees to leave and enter the hive. After the bees get established in the new location these obstructions, of course, should be removed.

Bees Carrying out Brood

Question.—Why do my bees carry out some of the undeveloped brood?—J. Sloan, Pa.

Answer. — They are probably short on stores. It will be well to open the hive to see if they have any honey. If not, they should be fed at once. Brood is sometimes carried out from other causes, such as being chilled, but especially in the spring the carrying out of brood is often the result of famine.

Bees in Orange Groves

Question. — In California I have an orange grove. Do you think that bees would aid in pollination of citrus blossoms? How can I prove it?—Robert S. Carvey, Calif.

Answer.—No scientific work has been done to show how much bees can increase the orange crop. Both in Florida and in California large growers are always glad to have beekeepers locate their bees in their groves. The largest orange grove probably in the world located in California has over 1000 colonies of bees placed throughout the grove at the special request of the owner. In the same way, owners of orange groves in Florida are coming more and more to realize the value of bees and so they invite beekeepers to locate bees throughout their groves. Orange blossoms are an important source of honey, and usually beekeepers are more than willing to locate their bees in groves.

Keeping Queen Downstairs . .

Question. — When I examine the hives and find the brood in the upper story in the spring, can a queen excluder be put on over the reversed brood chamber and let the empty super remain on top? I would examine the lower brood chamber every week or 10 days and if it is getting crowded, put some brood upstairs, but always leave the queen plenty of empty space for eggs downstairs. Would it not be easier to confine the queen when the hive is quite empty rather than wait for the honey flow when the hive is very crowded?—Henry Fricke, New York.

Answer.—Your proposed method of manipulating your colony throughout the season should work. If you have time to do this, all well and good. Here in Ohio we like to operate colonies in commercial yards in two story brood chambers with a queen excluder over each double brood chamber, putting on extracting supers a little in advance of the time they are actually needed. In most regions this procedure controls swarming. We see no objection to your method, if as already stated, you have time to manipulate your hives in the manner outlined.

Bees Kill Clipped Queen Facing Hives West

Question.—I have a crowded place and my bees go west to work. Would it be all right to face them to the West?—L. R. Sherman, Va.

Answer.—You should place your hives of bees on hive stands or bricks, rather than on a bench up in the air. The hives should be five or six feet apart to avoid having bees drift from one hive to the other. There will be no particular objection to having the hives face West provided there is some wind protection from that direction. However, South is the best direction for hives to face.

What to do with Combs of Granulated Honey

Question.—I have some old combs containing granulated honey. What can I do to separate the wax from the honey?—Harry McCurdy, Ohio.

Answer.—Our suggestion is that you place the combs of granulated honey in a metal container, then place this container of combs in a wash boiler containing hot water, the wash boiler being over a gas plate. Continue to heat the water until it comes almost to a boil. The combs and honey will liquefy. When left to cool, the cake of wax will be on top and the honey at the bottom. The cake of wax can be lifted off, the honey strained, and thus you will have the honey and wax separated. This would seem to be the simplest method for you to follow.

Shallow Supers for Brood Chambers

Question.—What, if any, would be the serious objections to having the brood chamber composed of two or three shallow supers below the queen excluder? I find the standard ten or eight frame hive is too heavy for me to handle.—Kirk Ely, So. Dak.

Answer.—There is no objection to having your brood chamber composed of two or three shallow supers instead of one or more standard supers. We have some colonies in shallow super brood chambers which do very good work. There are a few beekeepers over the country who do not like to lift heavy supers and therefore use shallow supers for the brood chambers and as supers.

A Means to Prevent Overstocking a Locality

By A. Gay
Inspector of Apiaries

The Arkansas Apiary Board in its endeavor to assist the beekeeping industry in Arkansas imposed a regulation whereby a yard of bees registered with the Apiary Board could be protected from crowding, that is, another yard of bees could not be placed within four miles of a previously registered yard without permission of the registrant.

Their authority to pass such a regulation under existing laws has been questioned so that the matter was referred to the Attorney General. His reply was as follows:

"Pursuant to Section 12408 of Pope's Digest, The State Apiary Board promulgated certain rules for the carrying out of the provisions of the laws in Arkansas to prevent, eradicate, or control the introduction, spread, or dissemination of communicable diseases of honey bees. One of the rules laid down by the board at its meeting held at Hughes, Arkansas, on August 15, 1945, as follows:

" 'That migratory beekeepers are ordered not to set on any location that is within four miles of a location previously registered. Responsibility for ascertaining knowledge of such location will rest upon the said migratory beekeeper.'

"Since the Legislature has given the State Apiary Board authority to prescribe and issue such reasonable regulations and orders, as in its judgment may be necessary to prevent, eradicate, or control the introduction, spread, or dissemination of any and all communicable diseases of honey bees, it comes down to a question of whether the aforementioned regulation or rule is reasonable. From our study of the habits of bees we are convinced that it is not an unusual thing for bees to fly as much as three or four miles from their colony. Hence, it is our opinion that the rule or regulation under consideration herein is reasonable.

"It is the duty of the Inspector to proceed against a violator of this act, or rule or regulation laid down by the Board, and in case of violation, Section 12421 of Pope's Digest makes it a misdemeanor and is punishable as such, under our criminal laws." Signed—Earl N. Williams, Assistant Attorney General.

This should clear up any doubt as to whether or not the Apiary Board is working in good faith and should also be a warning to beekeepers who practice crowding to be a little more cautious in selecting their locations. Beekeeping in Arkansas is by no means crowded so there is no excuse whatever for crowding a fellow beekeeper.

Georgia Bee Laws and Regulations

Migratory beekeeping is practiced in most States to some extent. In Georgia it has increased to such a volume that it has become a problem from a disease control standpoint. Migratory beekeeping has its advantages and disadvantages. It has helped bee culture in Georgia to the extent that today Georgia is recognized as one of the leading combined honey producing, package shipping, and orchard rental states. Last year Georgia spent one third of its annual inspection appropriation inspecting 18,000 colonies of migratory bees from 14 States and Canada. It is doubtful that any other state spends as much of its appropriation inspecting as many colonies from so many different states.

During the past two years, and especially since war restrictions have been removed from gas, tires, and trucks, thousands of colonies have been moved into Georgia with, and without, certificates or Georgia permits. Our inspection records show that disease has been found in over 75 percent of northern migratory operators. Disease has been found in counties that never had disease before migratory beekeepers moved in their bees. A number of apiaries of native beekeepers were infected and they suffered a financial loss. Most Georgia commercial beekeepers and state inspection officials do not favor a state-wide comb embargo. However, they feel that a comb embargo, or better en-

forcement of our bee laws and regulations, is necessary if Georgia bee culture, worth $2,000,000 annually, is to be protected.

The following laws and regulations are in effect and will be enforced. The Georgia law states that colonies of bees and used equipment, to be moved in, must be inspected and certified by your state official, and colonies of bees and equipment must be moved in within 60 days from inspection date. The regulations also state that you must have a Georgia permit to move in. To obtain the permit you send your inspection certificate to the State Department of Entomology, State Capitol, Atlanta, Georgia; give the number of colonies you plan to move in; the approximate date of entry and the Georgia county where you plan to locate your bees. The above laws and regulations will not inconvenience any beekeeper who wants to do what is right. This regulation gives Georgia inspectors a chance to inspect bees brought in, as we will know when and where to find them.

The Georgia law states that any beekeeper, resident or non-resident, who operates a queen or package business, shall pay a license fee of $25.00.

Anyone who is convicted of violating the Georgia bee disease law is subject to a $500.00 fine, and the Department Director has the authority to have the colonies of bees, and/or used equipment that is brought in illegally, destroyed or moved out of the State.

In the past some northern beekeepers have had their bees inspected during the summer months and then waited until mid-winter, when they were broodless and could not be inspected, to bring them into Georgia. This is a violation of the Georgia law and will not be permitted. Your bees must be in Georgia within 60 days after your inspection date.

Georgia welcomes migratory beekeepers and requests their cooperation with reference to bee laws and regulations. For information on package shipping regulations and Georgia bee laws write to Mr. C. H. Alden, Director of Entomology, 432 State Capitol, Atlanta, Georgia.

P. H. Holmes, Deland, Florida, who has bees to pollinate his orange grove. There are hundreds of moderate sized apiaries throughout the state that help to increase the citrus fruit crops and produce surplus honey. It does seem that our country needs more relatively small apiaries scattered over any given area, rather than a lesser number of large apiaries which may not give proper coverage for maximum pollination.

Just News

Jasper Knight of Hayneville, Ala passed away May 11 from a heart attack while saving a truck from a burning workshop. Mr. Knight is well known throughout the beekeeping industry as a breeder of bees and queens.

The Middlesex County Beekeepers' Association will meet at the home of Mrs. Everett A. Lovering, 73 Elm Street, Stoneman, Mass. This is on Route 128 a short way from Stoneman Center. Hives will be opened in the afternoon. Bring your questions and problems with you. Don't forget your picnic lunch, also cups and saucers for coffee and ice cream. We will have a speaker after lunch.—Harold R. Stevens.

A Summer Meeting of Honey and Pollen Plants Committee will be held in Atlantic City, Iowa, July 12 and 13. Hotel reservations may be secured by writing Glenn O. Jones, Atlantic, Iowa.

A joint meeting of the Minnesota and North Dakota Bekeepers' Associations will be held at Detroit Lakes, Minnesota, on July 25 and 26. The program, being planned by a committee of the two associations, will be of special interest to beekeepers and a large attendance is expected. A field trip to one of the largest commercial apiaries nearby will feature one of the afternoons. Dr. E. R. Root has already been secured as a speaker and others will be announced as arrangements are completed.—Arvid P. Benson.

The New Rochelle Beekeepers' Association will hold its next regular meeting at 2:30 P. M. on Sunday, June 16, 1946. It will be at the home of Mr. Lawrence A. Anderson, 652 Timpson Street, Pelham Manor, N. Y. This will be an outdoor meeting, weather permitting, and there will be a demonstration of hive inspection. Bee problems will be discussed, after which refreshments will be served.—B. F. Miller, Publicity.

The 1945 Report of the State Apiarist of Iowa has been received from the printer and is available for distribution. This publication is sent free upon request to any beekeeper. The report this year consists of 96 pages. The report carries a complete set of papers which were presented at the meeting in July 1945 at Atlantic of the Honey Plants and Pollen Committee of the National Federation. — F. B. Paddock, Extension Apiarist.

The Bronx County Beekeepers' Association will hold its monthly meeting at the home of Henry Kroger, 3661 Eden Terrace, Sunday, June 9, 1946, at 2:30 P. M. This should be an interesting meeting as Mr. Kroger is going in for queen rearing. We also will have a discussion from some of our most noted members on how sulfathiazole has cleaned up foulbrood in their apiaries. Refreshments will be served after the meeting. Mrs. Kroger will bake a large cake—the kind we all like. All are welcome.—Sam Roberts, Sec.

The Texas Beekeepers' Association will convene in Greenville Monday and Tuesday, June 10 and 11 in the first annual meeting since June 1941. It is significant that the 1946 meeting is to be held in the city where the original Texas Beekeepers' Association was formed in 1877, 69 years ago. During the early days of bee culture in this State, Greenville was the center of the bee industry that has spread to the four corners of the Lone Star State. Also, it is significant that the meeting will be held just 100 years after Greenville and Hunt County were organized—April 11, 1846.

"The City of the Whitest People and Blackest Land," whose slogan has popularized Greenville throughout the length and breadth of the land, is expecting a large and enthusiastic gathering of beekeepers from Texas and adjoining States on this first peacetime pow-wow of bee enthusiasts.

A tentative program has been arranged for the two day meeting. Among those to appear will be Glenn O. Jones of the National Federation, Atlantic, Iowa; Dr. F. L. Thomas, Chief Entomologist, A & M College of Texas; Hon. A. Gay, Inspector of Apiaries in Arkansas;

and other authorities on beekeeping and culture. Confirmation has been received from several well known authorities that they will be present for the two days and will appear on the program.

A period has been placed on the official program for the reorganiza- of the North Texas Beekeepers' Association following a preliminary meeting of interested culturalists at Roxton, in North Texas, last week. Also, the entire afternoon of the second day will be given for a separate meeting of the Womans Auxiliary of the State and National Beekeepers' Associations.

The local Chamber of Commerce is cooperating fully with President Shofner to make the coming convention one of the best in the history of the Texas Beekeepers' Association.

Correspondence Course in Beekeeping:—The General Extension Division of the University of Minnesota is offering a correspondence course in beekeeping consisting of 16 lessons which can be studied at one's own convenience. The student is under the personal guidance of an instructor who corrects the lessons and answers questions pertaining to beekeeping. The aim of this course is to present information on the subject of beekeeping in such a way that those who have had no experience with bees can start with one or more colonies in the spring and carry on with them successfully; also, to present enough fundamental information on bees and modern beekeeping practices to enable those who have had a few years of experience to add to their knowledge and improve their methods. The fee for the course is $10.00. For detailed information write to the Correspondence Study Department, General Extension Division, University of Minnesota, Minneapolis 14, Minnesota.—M. H. Haydak, Asst. Prof. of Entomology.

American Honey Institute News Notes

With efficient production and distribution of good quality honey, great future lies ahead for the industry.

* * * * *

When the president of one of our country's best known business concerns was asked to what he attributed his success, he said "Competition".

Sometimes we are apt to think of other Honey producers or Honey packers as our competitors. They are not competitors—they should be considered partners working shoulder to shoulder to bring our industry to unprecedented heights. Those who are putting our products out to be used for the same purpose as our product are the competitors.

* * * * *

A copy of the broadcast "Spring Salads" by Harriett M. Grace on May 15 may be had for the asking.

* * * * *

How do we package Honey? Do we give the consumer the size container she desires? In our self-service stores, do we find the Honey package easy to pick up? Is it free from dust or stickiness? Does it have the Just Arrived look?

* * * * *

Indications are that demand for all foodstuffs will continue strong this year.

This country has a population of eight million more than it had five years ago.

War torn countries need our help and we trust that we shall be able to give it to them.

* * * * *

Copies of "Old Favorite Honey Recipes" traveled by Air Express to Bermuda.

This week copies of "Old Favorite Recipes" were on their way to Budapest, Brussels, Sweden, and England.

* * * * *

The Institute is constantly studying trends in food tastes and habits of consumers.

It is developing recipes in which Honey is an ingredient.

It is preparing and distributing leaflets, booklets, and educational material for consumers, teachers, dietitians, and students.

Buy and Sell Here

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 10c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

CLASSIFIED ADS

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fairfield Honey Company, Millersport, Ohio.

WANTED—All types clover and fall honey, 1945 crop. Cloverdale Apiaries, Fredonia, N. Y.

WANTED—White and amber honey, any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY—Clover or light amber. C. H. Denny, 483 Moody Street, Akron, Ohio.

HONEY & BEESWAX—Highest prices paid. Mail samples. Advise quantity. BRYANT & COOKINHAM, LOS ANGELES, CALIFORNIA.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades. Carloads or less. Also beeswax. Pay Top Prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York 7, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Calif.

ALL GRADES OF HONEY needed badly. Our truck will pick up at your door and pay top cash prices. ALEXANDER CO, 319 Reynolds, Toledo, Ohio.

WANTED—Honey, extracted or comb. Mail sample, quote price. SEIFERT & MANN, 106 South Water Market, Chicago, since 1889.

WANTED CLOVER HONEY, any amount, comb or strained package or unpackaged. Will pay top price. Lose Bros., 206 E. Jefferson St., Louisville 2, Ky.

WANTED—light extracted honey, clover preferred, in 60's. J. Jones, 115 West 82nd St., New York 24, N. Y.

WE DARE YOU to sell us some honey. Cause we punish you with the highest possible price. Oh, you don't remember the name? Just ask the missus. She remembers your Honeymoon. The Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

COMB HONEY: Please advise quantity you have—size sections and how packed. I also need chunk honey in 16-oz. glass. F. H. Houck, P. O. Box 84, Kew Gardens, N. Y.

FOR SALE

QUEENBEE PAINTING OUTFITS, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

BEEKEEPER'S HOIST — $25.00 f. o. b. Frt. prepaid in U. S. A. on two hoists to same address. Turner Mfg. Co., Corning, Iowa.

FOR SALE—SUPERS for 10-frame hives for 4 x 5 sections. also 4 x 5 sections; comb foundation, etc. No disease. W. D. Achord, 1102 No. Cory St., Findlay, Ohio.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Ky.

WRITE FOR CATALOG. Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

WRITE FOR LOW CASH price glass jars and 5-lb. tin pails. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, N. Y.

WE CARRY a complete stock of bee supplies and honey containers. Write for our price list. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

INSTANT SEVEN AND NINE FRAME SPACERS. Fast — accurate — indispensable. Fat combs — easy uncapping. Set does all supers, $1.50 postpaid. SPECIFY SIZE. George Leys, 48 Drake Ave., New Rochelle, New York.

CLIP QUEENS without handling. SIMPLEX TRAP removes queen from hive, holds her in position for clipping elsewhere, without the annoyance of flying stingers, $1.75 postpaid — free circular. George Leys, 48 Drake Avenue, New Rochelle, N. Y.

FOR SALE — Quality medium brood foundation at .70 per pound. Fred Peterson, Alden, Iowa.

YES—10 TO 15 DEGREES COOLER—Your bee hives when coated with "Silverhide" The Ready Mixed Aluminum Paint will actually be from 10 to 15 degrees cooler inside, and besides this very important feature, the outside of your hives will be protected with a coating of aluminum paint that will withstand not only the weather elements but acid, fume, and brine conditions. Write today for further information and prices. Tung Oil Paint Mfg. Co., Inc., P. O. Box 83, Orangeburgh, New York.

FOR SALE—New Special Section Super. 150 slightly used 10 fr. supers 5⅝" deep, equipped with 9 N fences and 8 N frames which hold 4 sections 4¼ x 4¾ x 1⅜ each. Undoubtedly the best comb honey super in use, also adapted for shallow frames, 60c each in lots of 50 or more; also 75 new supers in flat as they were shipped from A. I. Root Co. of Medina, Ohio. A 4" rim nailed to bottom of super will make standard hive body. Cozy Nook Honey Co., Blackfoot, Idaho.

FOR SALE—Section holders, both beeway and 4 x 5, section presses, both hand and foot, Multiplex foundation fasteners with oil stove and 4 in. knife, queen grafting outfit, etc. Dr. B. W. Castle, New Lyme Station, Ohio.

FOR SALE—20 used supers for 4 x 5 sections, $15.00 F. E. Schriver, Grafton, O.

FOR SALE—Modern house with 30 acres, about 220 colonies of bees with equipment for many more, both comb supers and hive bodies, 8 and 10 frame. Beautifully located by Grand River. Certificate of inspection furnished. Barn, garage, work shop, storage house, all in good condition. Mrs. Axel Holst, Rt. 1, Lyons, Michigan.

FOR SALE—Ten supers with fixtures for 4 x 5 sections. In flat. Never unpacked. $14.00. Ray Mittower, Rt. 3, Bellevue, O.

FOR SALE—Quantity of new and used standard 10-frame hives, excluders, shallow frames, supers. W. R. Landmesser, Ashtabula, Rt. 2, Ohio.

FOR SALE—20 Standard 10-fr. empty hives with pre-war metal covers, $2.50 each; 20 shallow extracting supers with frames, $1.00 each; 50 small 6-fr. queen mating hives, $1.00 each. All clean and painted. A. E. Crandall, Berlin, Conn.

FOR SALE—Standard ten-frame hive bodies and bottoms, also four frame reversible extractor. N. B. Querin, Bellevue, Ohio.

HONEY LABELS — Improved designs, embodying color balance, simplicity, and distinction. Please send for free samples and prices. C. W. AEPPLER COMPANY, OCONOMOWOC, WISCONSIN.

WOODMAN RADIAL 50 frame extractor. Bought last season. Like new. $125.00. Robert Van Polen, 2207 Philip, Detroit 15, Mich.

EIGHT FRAME EXTRACTING SUPERS Thirty six. Good condition, painted. $16.50. Earle Heiges, Shiremanstown, Pa.

FOR SALE — 100 reversible bottom boards, 300 hive bodies, standard depth, 100 shallow, 4⅝, 100 hive covers. Frames for everything, entrance cleats, etc. A. H. Storms, Barton City, Mich.

Honey and Beeswax Wanted

We are ALWAYS in the market, paying best market prices.

Send for our 1946 price list on bee supplies.

Doing business since 1858.

The Fred W. Muth Co.
229 Walnut St., Cincinnati 2, Ohio

WANTED: Extracted Honey All Kinds
One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.
JEWETT & SHERMAN COMPANY
Lisbon Rd. & Evins, Cleveland 4, O.
1204 W. 12th St., Kansas City 7, Mo.

HONEY WANTED
All Grades - Any Quantity
Bryant & Cookinham
Los Angeles Honey Co.
2425 Hunter Street
Los Angeles 21, California

COMB HONEY NEEDED
Please advise the quantity you have—size section and how packed.
I also need chunk honey in 16-oz. glass.
Frank H. Hauck
P. O. Box 84 Kew Gardens, N. Y.
Bank reference furnished on request.

B E E S T I N G S
Pheno-Isolin stops the pain and quickly reduces the swelling. Takes the Terror out of beekeeping. Results guaranteed.
4-oz. bottle, $1.00 Postpaid.
The Force Co., Scranton 10, Pa.

Soy Flour and Pollen Traps
We are distributors of Staley's Lo-Fat, High Protein expeller processed soy flour for beekeepers. We offer the finest quality in our soy flour and pollen traps.
KILLION & SONS APIARIES
Paris, Illinois

The John M. Davis Strain
Bred the Davis Way
Italian Queens!

Guaranteed purely mated and to satisfy you in every way or your money refunded. You be the judge!

	1-24	25-up
Young laying queens	$1.25	$1.15
Young tested queens	1.50	1.40

After June 30th, Uutested, $1.00 each, any number.

LITTLE'S APIARIES

P. O. Box 122, Shelbyville, Tenn.

QUEENS
Select Three Band Italians
Prices after May 20:
1-24, $1.10; 25-99, $1.00; 100 up, $0.90.
Place your order now for delivery May 20 and after. Replace those poor queens and be SURE of a honey crop.
Eugene D. Cutts, Citronelle, Ala.

ITALIAN QUEENS
after May 10th. $1.00 each.
We would appreciate the opportunity of serving you.
RAPIDES APIARIES
Winnfield, Louisiana

Root Quality
BEE SUPPLIES
For Sale
Send your order to:
W. H. Starrett
121 N. Alabama Street
Indianapolis 4, Indiana

Wanted for 1947 Season

Two queen breeders! To run 8000 nuclei. Only honest reliable men considered. No drinkers. Year around work. Give age and experience. Can start any time.

Tanquary Honey Farms, Inc.
Lena, South Carolina

FOR SALE—Standard 10-frame supers. Edward S. Winkler, 1115 Plainfield Rd., Joliet, Ill.

BEES AND QUEENS FOR SALE

Gleanings cannot guarantee that all bees advertised for sale in its classified columns are free from disease. We use all possible care in accepting advertisements, but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, $1.00 each. D. W. HOWELL, SHELLMAN, GEORGIA.

PACKAGE BEES with young laying Caucasian queen; 2 lb. package with queen, $3.80; 3 lb. package with queen, $4.80. Miller & Evans, Three Rivers, Texas, Rt 1.

ITALIAN QUEENS selected for winter hardiness, production, non-swarming, and bred for resistance to A.F.B. Ready June 15, $1.25. R. E. Newell & Son, Medway, Mass. Air mail extra.

ITALIAN QUEENS for May and June delivery at $1.25 each. No more orders for packages accepted. John M. Brose, Capitola, California.

ITALIAN QUEENS, $1.00 air mail service from Albany. Pinkie & Buck Apiaries, Box 383, Albany, Georgia.

THREE BAND ITALIAN QUEENS bred from high producing colonies, none better. Prices through May, $1.00; June first and balance of season, 75c each. W. A. Fletcher, Garland, Texas.

EARLY PACKAGE BEES. Prompt shipment begins May 5. Two pound package and queen, $5.00 postpaid; Three pound package and queen, $6.50 postpaid. Choice Italian queen, $1.25. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa.

ITALIAN QUEENS good as the best in every respect. Prompt service, $1.10 each; $12.00 per dozen. READY JUNE 5. The Victor Apiaries, 26916 Michigan Ave., R. F. D., Belleville, Michigan.

GOLDEN ITALIAN QUEENS ,finest quality, select, $1.25 each up to 50; over 50, $1.10 each. Health certificate with every order. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, N. C.

REAL PETS — Brown's non-stinging, non-swarming bees. Good producers. This season's queen price, $2.00 each. Brown's Apiary, Cape May Court House, N. J.

BREWER'S LINE-BRED CAUCASIAN QUEENS— Breeding stock selected from 1000 field tested colonies for honey production and gentleness. Open dates from June 15th. $1.00 each. AIRMAIL, postpaid. Brewer Brothers Apiaries, 3217 Hawthorne Road, Tampa 6, Florida.

FOR SALE—A few days before honey crop! Complete 200 colony outfit, 10-frame, supers, excluders, etc., good and ready for 1946 crop! Certificate of inspection furnished. C. Paradis, 135 St. Jean-Ville St. Joseph, Drummondville, Ont., Canada.

NORTHERN BRED Italian queens, ready after June 20th, $1.00 each. Shirl Baker, Rodney, Michigan.

CAUCASIAN QUEENS, $1.00 each. Epling's Apiaries, Route 2, Covington, Va.

IMPROVED ITALIAN QUEENS, $1.00. From a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Jr., Caldwell, Texas.

CAUCASIAN QUEENS for balance of season. One, $1.00; lots of 100, $90.00; 2 lb. pkg., $4.00; 3 lb. pkg., $5.00. Lewis & Tillery Bee Co., Greenville, Ala.

HONEY-FLOW ITALIANS — Northern queens scientifically reared and carefully selected to please. Immediate shipment, $1.00 each. GREULICK & SON, ALTAMOUNT, NEW YORK.

ITALIAN QUEENS from highest producers in North and South. 75c each balance of season. Write for quantity prices and 1947 packages. S. J. Head, Crossett, Arkansas.

GREEN'S profit-producing queens will please you as they have pleased hundreds of others. Famous the country over. Where could you do better? Price, $1.00 each. D. P. Green, Rt. 2, DeLand, Fla.

GOOD QUEENS FOR SUMMER AND FALL REQUEENING. Gentle three-banded Italian stock thot has made outstanding records for honey production in areas where large crops are made. We now have the experienced help necessary to give you good queens and prompt service. Select young laying queens, $1.10 each; 25 to 99, $1.00 each; 100 or more, 90c each. Postpaid. Also package bees from now until October. They make fine summer increase. H. C. Short, Fitzpatrick, Ala.

FOR SALE—200 Colonies — Inspection certificate furnished, 3000 sheets 3-ply Airco, new and used equipment. M. C. Harter, Route 1, Lima, Ohio.

BEES WANTED

OLD SOLDIER wants 50 to 200 colonies of bees and equipment in Michigan. Send full details and price. Box 646, Gleanings, Medina, Ohio.

HELP WANTED

WANTED — Experienced helpers for queen yards, package bee yards and general bee work. Only honest, reliable men considered, no boozers. Give full information, age, experience, reference, and salary expected in first letter. YORK BEE COMPANY, JESUP, GEORGIA.

YOUNG MAN with some experience to help produce extracted honey. State age, habits, experience, and salary expected with board, room. Lavern Depew, Auburn, New York.

WANTED—One good bee man for this season. State wages, number of bees worked, and references in first letter. No drundards need apply. H. E. Crowther, Cass City, Mich.

ATTENTION YOUNG MEN! If you are agressive, able to drive a truck or semi; are interested in being part of an organization that puts the bees on the honey flows summer and winter, write. We make our own breaks. Penn Michigan Apiaries, 500 S. Almer St., Caro, Michigan.

WANTED — Experienced package bee man to take over large Southern package business with all equipment and steady demand. Must be able to organize and manage a crew, and to finance a share of operating capital on share plan. Box 2646, Gleanings, Medina, Ohio.

SEEDS

SEND POSTAL for complete story about the bluevine honey plant. Produces the finest flavored honey known. Always brings a premium in any market. TRITOX CHEMICAL COMPANY, WASHINGTON, INDIANA.

Leather Italian Queens

We are proud of the reputation our bees have made for themselves and for us.

We can now guarantee our bees to be of the highest production stock available today, and that our bees will not swarm unless badly neglected. We guarantee unconditionally that there is no gentler bee available anywhere.

We will gladly replace any queen that does not live up to this statement after introduction. Replacement made immediately if queens arrive dead or in poor condition.

Sent clipped or by air mail at no extra cost.
2 lb. pkg. with queen - $3.60
3 lb. pkg. with queen - $4.50
Queens, $1.00 - any number.

The Rich Honey Farms
Jeanerette, Louisiana

Yellow Italian Queens

Young selected untested laying queens with health certificate.
1-9, $1.00; 10 to 24, .90; 25 or more, .80.
Write for price on large quantities.

Plauche Bee Farm
Hamburg, Louisiana.

Hello, Folks

Here we are again, Stevenson's linebred Goldens! We are ready to work for you in our most excellent way.

Price for untested queens, $1.25; 50 to 99, $1.10; 100-up, $1.00.

Stevenson's Apiaries
Westwego, Louisiana.

ITALIAN QUEENS

Three-banded, Northern bred, for business. Safe arrival. Hope to send by return mail. 49th breeding Season.
Untested, $1.00; 6, $5.50; 12, $11.00,
Selected, $1.25.

I. F. Miller
Warren, Pa., Route 3.

CEDARBERG
UTILITY FURNACE

Price $18.40

Converts Kerosene Into Gas

which burns silently with a clean blue flame the same as natural gas. A safe, portable heating unit where clean controllable heat is required.

M. J. BECK COMPANY

Box 7 Lansing 1, Michigan

TURKEYS

Raise Turkeys The New Way. Write for free information explaining how to make up to $3000 in your own backyard. Address National Turkey Institute, Dept. 253, Columbus, Kansas.

MISCELLANEOUS

EARTHWORM CULTURE—Send postcard for valuable FREE bulletin, with review on "Intensive Propagation and Use of Earthworms in Soil Building". Thos. J. Barrett, Earthmaster Farms, Box 488-G, Roscoe, Calif.

WANTED TO BUY

WANTED—new or used, an electric uncapping plane or knife, good working condition. State size and price. A. B. Carlson, Hinsdale, Montana.

WARNING N. W. BEEKEEPERS: Glass and tin honey containers continue to be very difficult to obtain. Don't get caught short again this fall. Order at least part of your container requirements NOW. You'll be glad you did. Send for price list. HONEY SALES COMPANY, 1806-08 No. Washington Ave., Minneapolis 11, Minn.

SUPPLIES

DO-IT-WITH-BEES — Use Electric Heaters and Fans to air-condition your Beehives—both summer and winter—reduce winter losses, summer swarming, and produce more honey. Write today for FREE valuable information. D. F. McFarland, Engineering Council, Dept. G, Solon, Maine.

HONEY

Wanted

A Can or a Carload

Top Prices Paid

Will furnish 60-lb. cans if desired

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

INSECTICIDES

TRITOX FOR GREATER PRODUCTION. Highest quality garden insecticide and fungicide. A complete dust or spray program. Tritox is the recognized standard to meet your garden needs. 5 lb. parcel post $1.25. TRITOX CHEMICAL COMPANY, WASHINGTON, INDIANA.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s, 6d., ($1.50) International Money Order. Apply Editor. Indian Bee Journal, Ramgarh, Dist., Nain Tal, U. P., India.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in Combination with one year's subscription to Gleanings in Bee Culture, $2.25. Wallingford Building, Winnipeg, Canada.

Read the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, 14 Riebeck St., Worcester, C. P., South Africa.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existance. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription—$1.50. Hotel Cactus, San Angelo, Texas.

Everybody's Talking About
The Beekeepers' Magazine
It's Spicy — It's Independent
Send for your free copy and special introductory subscription offer today.
ELMER CARROLL — Publisher
Rt. 5, Box 181 Lansing, Mich.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the

"AUSTRALASIAN BEEKEEPER"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.

Write now to the Editor, P. O. Box 20, West Maitland, New South Wales, Australia

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations and plant possibilities.

1 year—$1.50; 3 years—$3.00 U. S. and Canada. Foreign postage 25c a year extra.

AMERICAN BEE JOURNAL
Hamilton, Illinois

Package Bees, Old Line Bred Since 1924

After June 10: Queens,$0.95; 50, .90; 100, .85; 2-lb. Package, $3.60; 3-lb. Package, $4.50; Including Queen; Extra Pound Bees, $1.00.

Place your order early to get your shipping date when wanted. War II veterans first served. Spring queens raised from stock of over 200 pound production after pulling bees for packages all spring till in July. 1945. Also daughters of queens bred for resistance to disease.

Homer W. Richard, Rt. 3, Box 252-A, El Dorado, Ark.

CREOLE—CARNIOLAN QUEENS

$1.00 each, POSTPAID

EPHARDT HONEY FARMS, Plaucheville, Louisiana.

QUEENS .... BESSONET'S .... QUEENS

We are prepared to supply you with queens during the summer and fall months at the following prices: 1-24, $1.10; 25-99, $1.00; 100 or more,90c each, postpaid.

BESSONET BEE COMPANY
Donaldsonville, Louisiana.

RED STICK APIARIES & CO.
PACKAGE BEES AND QUEENS
Twenty six years as Commercial Queen Breeders.
Oldest Combless Package Bee Shippers in Louisana.

PRICES AFTER JUNE 1st:
RESISTANT STOCK
QUEENS AND BEES
2-lb. pkgs. with Queens $3.50
3-lb. pkgs. with Queens 4.50
QUEENS EACH .90 CTS
ANY NUMBER
RED STICK APIARIES & CO.
Main Office, 125 Lessard St.
Donaldsonville, Louisiana.

ITALIAN BEES AND QUEENS

Prices:	
2 lb. pkg. with queen	$3.25
3 lb. pkg. with queen	4.25
4 lb. pkg. with queen	5.25
Queens, each	.90

Homan Bros.
R. 2 Shannon, Miss.

TOO LATE TO CLASSIFY

TRIMBLE'S DEVICE FEEDS SYRUP ACCURATELY, STEADILY, WITHOUT BOTHER, WASTE, OR MESS. So extremely practical, easy, cheap, handy, and simple that it will make you laugh. Dollar bill for four with instructions. Quantities, dime each. Satisfaction guaranteed. Husky Machine Company, Warroad, Minn.

ITALIAN QUEENS, satisfaction assured, $1.00 each. Write for quantity prices. Lange Apiaries, Llano, Texas.

Smith's Selected Bees and Queens

We offer our high grade packages and queens. All June packages are baby bees which will give you good results. We give good weight and guarantee delivery. We rear queens for QUALITY so wish you would try them and see for yourself. Prompt service and satisfaction is our motto.

Selected queens, 1 to 24, $1.10; 25 to 49, $1.00; 50 or more, .90.
June packages all with selected queens.

2 pound size, 1 to 24, $3.85; 25 to 49, $3.60; 50 or more, $3.40.
3 pound size, 1 to 24, $4.95; 24 to 49, $4.65; 50 or more, $4.40.

If queenless packages are wanted, deduct $1.00 per package.

Place your orders Now from above prices—you will be satisfied with our bees, queens, and service.

N. B. SMITH & COMPANY
Calhoun, Alabama.

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES
1 to 25, $1.25; 26 on up, $1.10—From Imported Strains.
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
(All Queens after June 15, $1.00)
J. B. TATE & SON
1029 No. 4th St., Nashville 7, Tenn. **Tel. No. 34509M**

the Hubbard APIARIES

WRITE FOR FREE CATALOG

Quality Bee Supplies Factory Prices
Prompt Shipment from Stock
Satisfaction Guaranteed

THE HUBBARD APIARIES

Manufacturers of Bee Supplies
ONSTED, MICHIGAN

5 POUND

GLASS

We have in stock for quick shipment several carloads of 5-lb. glass jars with 63 mm. white caps. Order all you need.

42c per carton of 6. Weight 10 pounds.
Carton 50 ten-pound tin pails. Wt., 40 lbs., $4.90 (in stock).
Carton 16 sixty-pound cans (2½" opening). Wt., 54 lbs., $5.40.
Note: June delivery promised on 60's. Other items from large Paducah stock. 5% discount on $50.00 orders; 10 % discount on $100.00 orders.

Walter T. Kelley Company Paducah, Ky.

The No. 50 Cedarberg Utility Furnace

CONVERTS KEROSENE INTO GAS

that Burns Silently with a Clean Blue Flame Like Natural Gas

SAFETY

Because it burns kerosene, safety is assured. Don't run risks or increase your insurance rates by using dangerous heating methods. And it's economical, too. Just think, this furnace will operate up to 12 hours on one gallon of kerosene at a cost of about 10 cents.

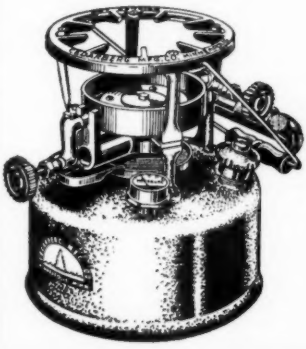
HEAT

This is not a wick type stove, but a real furnace operating under pressure on the fuel tank. It gives an abundance of heat. As an example of its capacity, two gallons of cold water can be brought to a boil in ten minutes and yet can be turned down to only simmering heat.

JUST THE THING FOR THE BEEKEEPER

You'll find a dozen uses for this portable heating unit, for heating the honey bottling tank, for liquefying honey, for heating the sterilizing tank, etc. Heat in large volume has many useful purposes on the farm. The housewife may use it for heating water for the laundry and as an auxiliary stove for cooking and canning and anywhere when constant and controlled heat is needed.

In Stock For Immediate Delivery
ORDER YOURS NOW



Specifications
Height ..... 11"
Floor space. 10¾"
Fuel cap. ..1 gal.
Net Wt. ..12½ lbs.
Ship. Wt. ..17 lbs.

$17.95
F. O. B. Mpls.

HONEY SALES CO., 1806-08 N. Washington Ave., Minneapolis 11, Minnesota, Exclusive N. W. Distributors.

Dear Sirs:

Send me...No. 50 Cedarberg Utility Furnaces for which I enclose $.....in check or money order.

Name .....

Address .....

City .....

State .....

Allowed for postage (....)

PUETT'S QUEENS

$1.00

Three Banded Italians

You Can't Beat the Best.

Puett Company

Hahira, Georgia

Italian Bees and Queens for 1946!

Lots	Queens	2 lbs.	3 lbs.	4 lbs.
1-5	$1.00	$4.00	$5.00	$6.00
6-24	.90	3.85	4.75	5.85
25 up	.85	3.75	4.50	5.75

Special, $70.00 per 100.

TERMS: 20 percent deposit, balance at shipping date.

For a bigger and better season get our line-bred Italians noted for their hardiness, vigorousness, and prolificness

B. J. Bordelon Apiaries

Moreauville, La

THRIFTY BEES

Combless packages and queens. Open shipping dates any time after June 1st.

Write for prices

Three-banded Italians only. THRIFTY bees are guaranteed to please.

Breeders since 1892.

W. J. Forehand & Sons

Fort Deposit, Alabama

Northern Bred

Leather Colored Italian Queens

90c each

Diemer Bee Co.

Route 2 Box 7

Liberty, Mo.

TALKS TO BEGINNERS

(Continued from page 351)

match box or some such receptacle to keep her from flying away. If the queen cage contains a sufficient amount of candy for another lot of attendant bees, we then put in a few attendants, about 8 or 10, preferably young bees taken from a comb removed from a colony. Now here is a little trick: Some smoke is blown over the top of the queen cage containing the attendant bees, but not too much. The queen is then put in with the attendant bees and more smoke is applied. One has to be careful to keep the nozzle of the smoker from touching the wire screen of the cage, else the hot smoke will injure the bees.

Smoking the bees and the queens seems to deodorize the bees. The same principle can be applied when introducing a queen to a colony by the smoke method. In reality the attendant bees in the cage constitute a very small colony of bees.

Obviously if we put fresh attendants into the queen cage, then put the queen among the strange bees without smoking, the bees would jump onto the queen and kill her. During the spring months when cold weather prevents our using queens received through the mail, this scheme just described works out to good advantage.

Locations for Bees

It seems that we know comparatively little as yet regarding bee locations, unless we have kept bees on certain locations long enough to test them out thoroughly. Every beekeeper knows that there is quite a difference in locations even six of seven miles apart. In some cases the locations that appear to be good are, in fact, not so good. The locations that may not appear to be good for nectar may actually be the best locations.

Large or Small Apiaries

A number of years ago while operating bees commercially in Northern Michigan, I had almost 250 hives in one yard. I thought the number of colonies was too great for the location. However, the bees did quite well and stored good crops. One year I moved a part of the large apiary to another location about four miles away. To my surprise, the per colony yield did not increase

(Next page, please)

over the previous year.

At the present time there appears to be a tendency to maintain smaller apiaries rather than large ones, in order to take advantage of available bee pasture and to avoid overstocking. However, in a territory that has an abundance of pasture it is quite difficult to over-stock.

As beekeepers in the North look forward to the honey crop it is well to have all supers and equipment ready when the flow starts. Quite often supers are not put on early enough and consequently the colonies become congested. Queen cells are started and swarming will occur unless drastic measures are used to prevent swarming.

As a matter of fact, it does no harm to put supers on a little in advance of the time they are actually needed. If the bees need the super space they will take advantage of it. If not, no harm is done. Some object to putting supers on too early, especially if the weather is cool, on the ground that more space is given for the bees to keep warm. However, strong colonies will take care of the brood unless the weather should turn very cold.

Top Supering Versus the Orthodox Method

There appear to be two schools of thought on supering. Some beekeepers cling to the so-called orthodox method of placing the new supers at the bottom of the pile, directly under the queen excluder, where extracted honey is produced. It seems to be a fact that this method has some advantages, not to mention the disadvantages. Theoretically, the partially filled super raised up in order to place the empty super underneath, would have a tendency to attract the bees up out of the brood chamber into the supers. This orthodox method does seem to work quite well, especially at the beginning of the honey flow. If this method is followed during the entire season, it means that the beekeeper has to lift the filled and partly filled supers off the brood chamber in order to put a fresh super at the bottom of the pile, then has to lift these supers back onto the hive. With the top supering method, an empty super is placed at the top of the pile when needed.

(Continued on page 376)

KNIGHT'S

Leather Colored Italians

QUEENS

The best honey gatherers.

* * * * *

Prices:
$1.00 each; 100, 90c each.

* * * * *

No charge for clipping.

* * * * *

Pure mating guaranteed.

* * * * *

Jasper Knight
Hayneville, Alabama

Pure Italian Bees and Queens

"Queens" "Packages"

Live delivery guaranteed. No C. O. D. orders. Order direct from this ad. 20 percent books your order.

Baby Bees Overweight Packages

Prices:

	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100-up	1.05	3.50	4.50	5.50	6.50

C. W. Baker

Western Union ..... **Epes, Ala.**
Post Office ..... **Sumterville, Ala.**

"We have never had any disease"

Booking Orders for 1946 for Our Bright Three-banded Italian Queens and Package Bees

PRICES:	Packages and Queens	2 lb.	3 lb.
1 to 24	$1.10	$3.85	$4.95
25 to 99	1.00	3.60	4.65
100 up	.90	3.35	4.35

We ask 10 percent deposit with all orders booked in advance. We guarantee safe arrival and satisfaction.

TAYLOR APIARIES
Box 249, Luverne, Alabama.

Look for this Sign
When You Want
QUALITY AT LOW COST!

Trade Mk. Reg.
U. S. Pat. Off.
KELLEY—"The Bee Man"

QUEENS

$1.00 each

10 for $9.00

Write for prices, 25 or more, Young Three-Banded Laying Queens. Fresh from our Yards. Health Certificate with each Shipment. Shipped Daily from Paducah.

The Walter T. Kelley Co., Paducah, Ky.

Three Banded Italian Bees and Queens

Queens		2-lb pkg. with queen		3-lb. pkg. with queen	
1-24,	$1.00	1-24,	$3.50	1-24,	$4.50
25-up	.90	25-up,	3.25	25-up,	4.25

For queenless packages, subtract price of queen.

We ship only overweight packages of young bees, and young queens guaranteed to be purely mated.

Direct all mail to us at LEROY, ALA., and telegrams to us at JACKSON, ALA.

Holder Apiaries, Leroy, Alabama.

(In the mild climate of the deep South)

QUEENS

Progeny-Test 3-Banded Italians of Highest Quality

Also Mraz's Strain of High Quality Daughters of Stock Bred for Resistance

Health Certificates accompany all shipments.

1 to 10, $1.00 each; 11 to 25, 90c each; 26 and up, 75c.

No Extra Charges for Clipping

Garon Bee Company, Donaldsonville, La.

Better than ever Queens for Requeening

$1.10 ea.; 25 or more, $1.00 ea.; 100 or more, 90c ea.

25 or more queens shipped in special cage by express prepaid. This insures better delivery and easier introduction.

No more packages till 1947.

J. M. Cutts & Sons

Chipley, Florida

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S

Economy Foundation

Not excelled for quality strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons

R 4. Bay City, Mich.

Lotz Quality Sections

featuring

Top quality material--Glossy polish--Smooth dovetails--Oval V-grooves--Accurate Dimensions--Fine workmanship--Reasonable prices.

With the ever-increasing demand for comb honey why not produce more, and increase your profits? Remember there is no ceiling price on comb honey.

Prices in our 1944 pricelist still in effect.

AUGUST LOTZ COMPANY

Manufacturers and jobbers of Bee Supplies

Boyd - Wisconsin

MACK'S QUEENS

(They Speak for Themselves)

Our system of producing these Big Hardy Northern Bred Italians assures you of Quality of the Highest Quality. (See our Ad in May issue) These queens produce scads of bees so Gentle and Docile your back-lot neighbors will hardly know you keep bees. All queens fully guaranteed.

Price: $1.00 each. Clipped if you say.

Herman McConnell & Sons
Robinson Route 2 Illinois

Quality Italian
PACKAGE BEES AND QUEENS
THANK YOU - - - -

The customers who have made our initial season a success.

We tried to give you quality and service. We think we did a good job. This, however, is for you to say. If we failed in any particular, tell us; if we pleased you, tell your friends. We are now beginning preparation for more business next season and can promise you our utmost in quality and service.

Order early for the best date reservations.

GIRARDEAU APIARIES
J. H. Girardeau, Jr., Mgr., Tifton, Ga.

Q U E E N S
WHY NOT GET A FULL CROP OF HONEY?
Requeen with Dexter's Queens
3-BANDED ITALIANS

Get your queens from improved parentage, produced under superior conditions, and from stock which is checked for honey getting performance. All our breeders are northern producers.

$1.00 EACH, Any Number
Quick Delivery
DEXTER BROTHERS
Myrtle Beach, S. C.

Package Bees and Queens
Three-Band Italians

Shipment after May 10th.

Packages by Express collect. Queens by mail postpaid. Safe delivery guaranteed or replaced without cost. All packages with queens.

Prices; May shipment:

	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1 to 24	$1.25	$4.00	$5.10	$6.25	$7.45
25-up		3.75	4.85	5.95	7.20
Prices after June 1st:					
1 to 24	1.00	3.80	4.90	6.00	7.15
25-up	.95	3.60	4.65	5.70	6.85

No Disease. State Inspected.

Order as early as possible and send cash in full with order. Canadian orders payable in U. S. Funds. We are booked to capacity through April and early May.

Crenshaw County Apiaries
Rutledge, Alabama, U. S. A.

QUEENS 3-Banded Italians

1 to 24, $1.00; 25-up, 90c.

Eells Honey & Bee Co.
Houma, La., U. S. A.

Quality and Production Bred
ITALIAN QUEENS
June prices ..... .90 each
Heart O' Texas Apiaries
Box 1203 Waco, Texas

Hollopeter's Italian Queens

This strain of hardy Northern-bred queens now ready. Untested, $1.00 each, any number. We are doing our best to give prompt service, but cannot guarantee by return mail delivery on all orders until July..

WHITE PINE BEE FARMS
Rockton, Pa.
Gleanings advertisers since 1911

GOOD NEWS!

FULL LINE OF

Continental Honey Cans

AGAIN AVAILABLE

2½ lb. Single Friction Top Can;

5 lb. and 10 lb. Pail; and 60 lb. Square Can.

Call the Nearest Continental Distributor

PHOENIX, ARIZ.
Quick Seed & Feed Co.
Western Seed, Feed & Honey Co.

TUCSON, ARIZ.
W. C. Collier

ALAMEDA, CALIF.
G. T. Hansen Co.

ALHAMBRA, CALIF.
B-Z-B Honey Co.

DENAIR, CALIF.
Snider Honey Co.

LONG BEACH, CALIF.
J. E. Delgado & Co.

LOS ANGELES, CALIF.
Bryant & Cookinham, Inc.
California Honey Co.
Diamond Match Co.
Hamilton & Co.
Los Angeles Honey Co.

SAN FRANCISCO, CALIF.
E. F. Lane & Son

VALLEY CENTER, CALIF.
A. K. Whidden

DENVER, COLO.
Bluhill Foods, Inc.

MONTROSE, COLO.
Western Colorado Honey Exchange

BOISE, IDAHO
Reilly, Atkinson & Co., Inc.

GREELEY, IDAHO
L. R. Rice & Sons

CHICAGO, ILL.
A. I. Root Co.
Sears, Roebuck & Co.

HAMILTON, ILL.
Dadant & Sons

DECATUR, IND.
The Brock Store

COUNCIL BLUFFS, IOWA
A. I. Root Co. of Iowa

McGREGOR, IOWA
John Harnack & Sons

SIOUX CITY, IOWA
Sioux Honey Assn.
G. B. Lewis Co.

SAC CITY, IOWA
La Verna Roose

PADUCAH, KENTUCKY
Walter T. Kelley

GRAND RAPIDS, MICH.
A. G. Woodman & Co.

ONSTED, MICH.
L. M. Hubbard

BADGER, MINN.
Gordon A. Bell

FOREST LAKE, MINN.
Lionel Hopkins

MINNEAPOLIS, MINN.
Mondeng Mfg. Co.

MOORHEAD, MINN.
Northwestern Supply Co.

HIGGINSVILLE, MO.
Leahy Mfg. Co.

MANHATTAN, MONT.
Cloverdale Apiaries
H. B. Chambers

ALBANY, NEW YORK
G.B. Lewis Company

CROTON, NEW YORK
Finger Lakes Honey Prod. Assn.

SYRACUSE, NEW YORK
A. I. Root Co.

FARGO, N. D.
Maghill & Co.

SAN ANTONIO, TEX.
A. I. Root Co.

SALT LAKE CITY, UTAH
Miller Honey Co.

LYNCHBURG, VA.
G. B. Lewis Co.

WATERTOWN, WIS.
G. B. Lewis Co.

POWELL, WYO.
A. D. Hardy

Continental Can Company, Inc.

Prices after June 1st

Three Band Italian Bees with Queens of Highest Quality

2-lb. pkg. with queen.....$3.50
3-lb. pkg. with queen..... 4.50
Queens each..... 1.00
Queenless packages, deduct queen price

E. R. RALEY
Box 1610 Daytona Beach, Fla.

Three Banded Queens - Italian

Leather colored Strain
Any Quantity, $1.00 each; Over-weight 3-lb. package and queen, $5.00 each

Gooch Apiaries
Farmersville, Texas.

GOLDEN WEST!

Try our western-bred queens and bees, for they are the best. The war is over now and the Clifton Brothers are back together again to give more efficient service and better bees and queens than ever before. We are booking orders for spring 1946.

CLIFTON APIARIES
OROVILLE Box 684 CALIFORNIA

TALKS TO BEEKEEPERS

(Continued from page 371)

Some years ago, in the sweet clover area, we were able to operate colonies in double brood chambers, with a queen excluder on top of each double brood chamber throughout the season. We added the first super during the early spring flow, then when the clover flow started we added more supers on top as needed. We were at that time to work this top supering method to good advantage.

During recent years, especially in some locations, there has been a rush of nectar during the early part of the major flow. This has excited the bees and caused them to build queen cells. Where these conditions prevail, we leave the queen excluders off at the beginning of the season, permitting queens to go up into the third super if necessary. After the swarming fever is over we then put the queen down into a single brood chamber and pile additional supers on as needed. This idea of having the queens in a single brood chamber does help to get the food chamber well filled. This is quite necessary.

I haven't said much that will be of special interest to beginners or backlot beekeepers in this talk, but will try to do so next time.

ST. ROMAIN'S "HONEY GIRL" ITALIANS

Packages	1 to 4	5 to 11	12 to 49	50 up
3-lb. with queen,	$5.00 ea.	$4.75 ea.	$4.50 ea.	$4.40 ea.
4-lb. with queen.	6.00	5.75	5.50	5.40
Queens,	1.00	0.90	0.85	0.75

Book your order for Summer requeening in advance, if possible. It will help us to give you better service.

St. Romain's "Honey Girl" Apiaries, Moreauville, La.

SUNKIST QUEENS

How much honey did you fail to gather due to failing queens? Don't risk another short crop due to inferior queens. Ours are young, vigorous, laying Italian queens. We offer mated queens, live delivery, health certificate, satisfaction.

REDUCED PRICES, Postpaid: 1-25, .90; 25-up, .80.

Houma, La. **SUNKIST BEE CO.** Rt. 2, Box 9, Tel. 1299 J

LIVE AND LEARN

(Continued from page 337)

Some of the farmers hilled them up for ground storage to wait for a better price. Smartweed grew up and came in with nectar right after Labor Day. My bees, two miles away didn't get more than a smell of it.

So, my advice on supering is this: Put on enough super room to handle an average crop in plenty of time for the bees to get it ready. Then leave it there until there is no more chance for honey to come in. If, during the season, it looks like they might need more room, give it to them in plenty of time. If you want to extract during the season, do it, but keep the supers ready for the bees. If the room is there, they will find it when the opportunity comes. If the opportunity doesn't come, the worst that can happen is that they will keep the combs in perfect condition for you. If the nectar is there but the supers are not, you lose.

Maybe I am wrong, but that's what I do. Never mind all this manipulation business trying to get the last drop. It's too tough on the back, and you probably lose more by confusing the bees by changing them around all the time.

QUEENS

75c each

Any Number

By Return Mail

Bright 3-Band Italian bees and queens of highest quality. Purely mated. Full weight packages. Safe arrival and satisfaction. Health certificate furnished. Packages express collect.

Unt. Queens	$ .75
Tested Queens	1.50
2 lb. pkg. with Queen	3.50
3 lb. pkg. with Queen	4.50
4 lb. pkg. with Queen	5.50

No Stamps Accepted

JOHN A. NORMAN

Ramer, Ala. - - - - - - - Route 2

ITALIAN QUEENS

These queens are a dark three-banded strain that are good producers.

$1.00 each

A. M. Peach

Baldwyn, Mississippi.

Better Bred Queens Three Banded Italians

We have a large queen yard going strong, and as our package season is over, we will have a large surplus of queens of the best quality. We are willing to sell them at a low price rather than cut our queen yard down. Send your rush orders. We can fill them promptly.

Queens, 70c each, any quantity.

CALVERT APIARIES **Calvert, Alabama.**

1946 PACKAGES BEES AND QUEENS 1946

For profit or pleasure **Bright Three-Banded Italians** **Yes, we have them**

- - - - Queens By Return Mail - - - -

Whether you are buying bees for pleasure or profit, you will be pleased with our bright 3-banded honey-gathering strain of Italians. Safe arrival, satisfaction guaranteed. Health certificate furnished. They will be ready when you want them.

Prices:	1-24	25-100
2-lb. pkg. with queen	$3.75	$3.50
3-lb. pkg. with queen	4.75	4.50
Tested queens	1.60	1.50
Untested queens	.80	.75

Package bees F. O. B. Express; if by parcel post, add postage.

NORMAN BROS. APIARIES, RAMER, ALA.

Italian QUEENS

Postpaid to you

Any number,

$.85 each

TANQUARY

Honey Farms, Inc.

• Lena, South Carolina

Moore's Strain

Away back in 1879, I commenced rearing Italian queens with the object of improvement constantly in view. By careful selection during all these years I have succeeding in producing a strain of three-banded leather-colored Italian bees known as Moore's Strain of Italians which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Send for descriptive circular and read reports from those who have tried them. Untested queens, $1.25 each; 6 for $7.00; 12 or more, $1.00 each.

J. P. Moore, Falmouth, Ky.
Route 3

Former address, Morgan, Kentucky
Safe arrival and satisfaction guaranteed

QUEENS * * QUEENS

Three Banded Italian queens, best of quality. Satisfaction guaranteed; a health certificate with every order.

1 to 25, $1.25 each; 25 to 50, $1.15; 50 and up, $1.05.

Alamance Bee Company

Geo. E. Curtis, Manager., Graham, North Carolina.

Gentle Northern Queens

From tested 3-banded Italian breeding stock

All queens are reared under natural conditions in large over-wintered queen-right colonies. Nature's way of producing large fully developed queens. These hardy northern strains of Italians are meeting with approval in many parts of the world.

Prices June 1st to Oct. 15th:

Young untested

1-24 ..... $1.10
25 up 1.00

Young tested

Any quantity 2.00

Queens shipped Airmail Postpaid

Approved package bees shipped from the South by express collect, 3-lb. pkg., $5.00 cash with order..

Prompt service, satisfaction.

Barger Apiaries
Carey, Ohio

DEPENDABLE 3-BANDED QUEEN BEES

Place your order NOW for Summer and Fall Delivery

June 1st, through October.

1 to 11, $1.00 each
12 to 99, .90 each
100 or more, .80 each

TERMS; Cash with order

Live delivery and Satisfaction Guaranteed,

Health Certificate with each shipment;

John C. Hogg, Tifton, Ga.

Italian Package Bees and Queens

	1-24	25-49	50-up
2 lbs. with queen	$3.50	$3.40	$3.20
3 lbs. with queen	4.50	4.40	4.20
Extra queen	1.00	0.90	0.80

Guaranteed safe arrival free from disease.

No C. O. D.

Oscar Arnouville

Hamburg, La. Box 35

3-Banded Italian Bees and Queens

We are booking for May delivery

	2 lbs.	3 lbs.
1 - 24	$4.00	$5.00
25 - 99	3.75	4.75
100 and over	3.50	4.50
Queens	1.10	

J. P. CORONA, Kenner, La.

It is never too late - -

to get the help which is available to you in daughter queens of "DR" stock. It will be a real help in your fight to control American foulbrood.

The performance of this stock is why beekeepers are placing repeat orders for larger numbers of queens. Satisfaction is what you get with the use of this stock.

This stock has been improved each year by scientific selection. No other stock can offer the quality of parentage, of rearing methods, and of apiary testing service. So why not buy those queens which will give you the greatest value.

Write for shipping dates.

No change in prices for this season.

Iowa Beekeepers Association
State House Des Moines 19, Iowa

Norman's Bright Italian Bees and Queens

For 26 years we have been breeding the Italian bees and queens. We guarantee pure mating of queens. State inspected.

All package bees F. O. B. Express.

2-lb. pkg. bees with queen	$3.75
3-lb. pkg. bees with queen	4.75
4-lb. pkg. bees with queen	6.00
Untested queens	.75
Tested queens	1.50

Norman Bee Co.
Ramer, Ala.

JENSEN'S

Super Quality Queens

"Magnolia State" strain. Our own development and still our standard. Also Daughters of Disease Resistant stock, parentage of which has been tested under proper supervision and authority in Iowa and Illinois. Both breeding queens and drone mothers have been subjects in these tests. We are reproducing daughters of this stock in isolated apiaries sufficiently removed from any other bees to insure as nearly 100% purity of mating as is possible in nature. If American foulbrood is prevalent in your territory, introduce these queens as a safeguard.

Prices balance of season:
"Magnolia State" Strain.
1-24, $1.10 ea.; 25-99, $1.00 ea.
100-up, $0.90 ea.
Daughter of D/R (Disease Resistant).
1-24, $1.25 ea.; 25 and up, $1.15.

Jensen's Apiaries

Macon, Miss.
"Where quality reigns supreme"

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers - 10% to 40% ahead of the average Italians. Foundation stock from the mountainous region of Terek, Caucasus

CARNIOLANS

Build up rapidly even during unfavorable springs. Prolific at all times, very gentle, best of workers, 35th year with them.

Prices: Untested queens ..... $1.00 each
Tested queens ..... 1.75 each
Tested queens ready about June 20th
Queens by Air Mail 6c extra per queen

Albert G. Hann, Glen Gardner, N. J.

Three Banded Italian Package Bees and Queens

Here is where you can get prompt shipments on Italian Package Bees and Queens after May 5th. So get your order in now. Full weight and live arrival guaranteed.

Prices after May 5th:

Lots of:	Queens	2 lb.	3 lb.	4 lb.
1-24	$1.10	$3.85	$4.95	$6.05
25-99	1.00	3.60	4.65	5.70
100 up	.90	3.35	4.35	5.35

Write for Special Prices on Queens to be delivered

FARRIS HOMAN
Shannon, Mississippi.

PACKAGE BEES!

are necessary in your program for 1946. Sugar is going to be scarce for sometime yet and honey will still demand top prices.

To produce the maximum crop replace winter loss and fill all available equipment with PACKAGE BEES!

Boost wintered over colonies with queenless bees.

Supplies and labor are either on hand or available to assure you prompt service on orders placed early!

2-lb. with queen $3.50
3-lb. with queen 4.50

SATISFACTION GUARANTEED

Rossman & Long

P. O. Box 133, Moultrie, Ga.

PACKAGE BEES AND QUEENS

Leather Colored Italians
Bred for Production

Prices of Package Bees with Queens

Lots of	2-lb.	3-lb.	Ex. Queen
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms, 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it is our fault, if it is the carriers' fault, file claim with them. We are now shipping. Old customers will be given preference.

THE ISLAND APIARY

Cellier City, Fla.

READ

THE BEEKEEPERS ITEM

You can not afford to miss a single copy of the ITEM. The inventor's page pictures new devices that will make your work easier, faster, and more enjoyable. You will find many worthwhile articles and pictures in each issue. The ITEM, now in its 30th year, takes on new life and vigor.

PICTURES

We need many pictures each month for our magazine. Pictures that are clear and sharp, showing bee yards, honey houses, and of anything pertaining to the bee industry. Pictures of well painted, neatly arranged equipment of which you are especially proud and which will induce other beekeepers to improve their equipment.

SUBSCRIPTION RATES: 1 year, $1.00; 2 years, $1.50; 3 years, $2.00.
Sample copy mailed free.

THE BEEKEEPERS ITEM

WALTER T. KELLEY, Editor PADUCAH, Ky.

York's Package Bees and Queens for 1946

Quality Bred Italians

No Change in Price for Coming Season

PACKAGE BEES WITH YOUNG LAYING QUEENS

Quantity	1 to 2	3 to 27	30 to 96	99 up
2-lb- pkgs.	$4.25 each	$4.10 each	$3.95 each	$3.75 each
3-lb. pkgs.	5.25 each	5.10 each	4.95 each	4.75 each
Extra Queens	1.30 each	1.25 each	1.25 each	1.25 each

Queenless Packages, deduct $1.10 per package.

Booking orders now for 1946, same terms and price. We thank our customers for their patronage and will be prepared to serve you better with highest quality the coming season. A large number of buyers have already placed orders for the coming season and if you have not done so, we urge you to do so without delay for better choice of shipping dates. There is every indication of an extra heavy demand. Order direct from this ad and save time.

YORK BEE COMPANY, Jesup, Ga., U. S. A.

The Universal Apiaries

ITALIANS! **QUEENS!** **CAUCASIANS!**

Daughters of Queens bred for Resistance — Bred to Italian Drones
All three races bred in separate yards.

2-lb. package bees with queen, $4.00; 3-lb. package bees with queen, $5.00
Extra Queens, $1.25 each

OVER 25 YEARS A SHIPPER IN U. S. A. AND CANADA

Sulfathiazole used in feed at no extra cost to you.

MASTER MIX POLLEN made from Soybean flour, Cottonseed meal, Brewers yeast, Skim milk, Natural pollen, Invert sugar and Sulfathiazole, 10-lb. pail, $2.50 six pails, $13.50. Send for FREE CIRCULARS.

BLUE BONNET APIARIES, Rt. 2, Box 23, WESLACO, TEXAS

Reliable Service - - - - Reliable Package Bees and Queens

THREE BANDED ITALIAN BEES AND QUEENS

Price list for shipment after June 1st via return mail or Express.
F. O. B. my shipping point.

	Queens	2 lb. pkg.	2 lb. pkg.	4 lb. pkg.
1-24	$1.10	$3.85	$4.95	$6.05
25-99	1.00	3.60	4.65	5.70
100-up	.90	3.35	4.35	5.35

Pure mating, safe arrival, and entire satisfaction guaranteed.
All orders handled promptly.

W. E. Harrell **Hayneville, Alabama**

PACKAGE BEES

This has been a very good spring for the production of bees, so we can handle some additional orders. If you have not got your bees yet, rush your order in and we will give it our prompt attention.

Also, we have lots of good queens for last of May and June delivery.

CAUCASIANS OR ITALIANS

Prices Through May 20th:

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	**$1.25**	**$4.00**	**$5.10**	**$6.20**	**$7.30**
25-99	**1.15**	**3.75**	**4.80**	**5.85**	**6.9?**
100-up	**1.05**	**3.50**	**4.50**	**5.50**	**6.50**

Prices After May 20th:

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1-24	**$1.10**	**$3.85**	**$4.95**	**$6.05**	**$7.15**
25-99	**1.00**	**3.60**	**4.65**	**5.70**	**6.75**
100-up	**.90**	**3.35**	**4.35**	**5.35**	**6.35**

For Queenless Package Deduct Price of Queen

Payable in U. S. Funds

THE STOVER APIARIES

Mayhew, Mississippi

Here's Your Bargain

in **CUSHION MUMS.** For $1.00 we send you at planting time our assortment of six colors hardy field grown plants. Colors bronze, rose, red, white, yellow, and red with yellow center. You will have hundreds of blossoms all fall. Mail your order today.

Riverside Nurseries,
Dept F8 Route 5 Elkhart, Ind.

Send for free catalog—hundreds more!

—GOT A HOBBY?--

Keep up with the latest developments in your field. Here's a group of magazines that specialize in a particular subject! Send your subscription today!

Gleanings in Bee Culture, $1. per year
Beekeepers' Item, $1.
American Bee Journal, $1.

DAIRYING
American Dairy Goat News, m., $1.
Dairy Farmers' Digest, $1.
Dairyland News, s. m., 50c.

FARMING
The Country Book, quarterly, $1.
Farmers' Digest, m., $2.

FRUIT
Better Fruit, m., $1.
Eastern Fruit Grower. $1.

LIVESTOCK
Berkshire (Hog) News, m., $1.
Chester White (hog) News, m., $1.
Southeastern Cattleman, $1.
Pacific Stockman, $1.
The Sheepman, $1.
Arizona Stockman, m., $1.50
Plantation Stockman, m., $2
Coastal Cattleman, m., $1.

HORSES
The Horse, bi-monthly, breeding, schooling, training, horse sports, $5.
Thoroughbred (Horse) Record, w., $4.
Rider and Driver, m., horse-sport-pleasure, $3.50
Spokesman & Harness World, m., $1.

PIGEONS
American Pigeon Journal, Squab-fancy, $1.50
Pigeon News, fancy only, $1.50

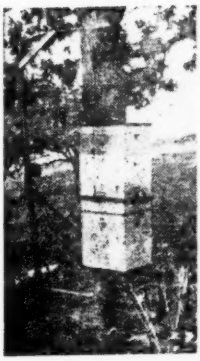
RABBITS
Small Stock (rabbits, cavies), $1.
American Rabbit Journal, m., $1.
Inter. Comm. Rabbit Journal, (Angora) $1.
American Angora Rabbit Magazine, $1.00 a year.

OTHER SPECIALTIES
The Soybean Digest, $1.50
New Agriculture (sugar beets only) $2
Small Com. Animals & Fowls, 50c
Co-operative (Farmers) Digest, $2
Modern Game Breeding, m., pheasants, $3.
Black Fox Mag., m., fox, mink, $2
Frontiers (natural history) 5 issues, $1
Canary Journal, m., $2.
Tailwagger, m., (Dogs) $2.50.
Eagle Mail Order News, m., $1.
Good Health, m., $1.
Canary World, m., $1.25.

All magazines are monthlies unless otherwise noted; prices are for one full year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscription today. Remit in any way convenient to you

MAGAZINE MART

Dept. G B Plant City, Florida
Sample copies at single copy prices.



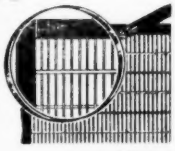
Use the
Handy Hive Hoist
to work your bees

Takes the back work out of bee work.

Pat. applied for. Write for descriptive folder

Tuttle Mfg. Co.
Baraboo, Wisc.

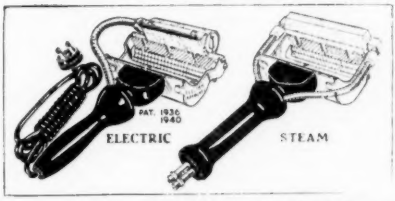
THE ONLY WORTHWHILE
QUEEN EXCLUDER
on the market



Chrysler's All Steel Electric Welded Queen Excluder allows maximum bee passage, better ventilation, more honey production. No wood, no sharp edges to injure bees, no burr combs. New rust proofing process. So durably made and accurately spaced that it is permanently Queen excluding and will last a lifetime. Why not try a carton of 10? Send for circular E-2.

W. A. CHRYSLER & SON
Chatham - Ontario - Canada

Improved Rosedale Steam and Electric Uncapping Planes



Price, $7.50 for steam, and $10.00 for the electric plane. Extra cupper blades, 75c.
Delivery charges extra

John J. Maendel
Mfg. Steam and Electric Uncapping Planes, Portage La Prairie, Manitoba, Canada.

Contents

June - 1946

Swarm Control in Large Hives...Chas. S. Hofmann.....321-324
Clethra Alnifolia...Milton H. Stricker.....325-326
A Re-Emphasis on Strong Colonies and Forces of Honeybees
D. O. Wolfenbarger.....327-329
Standardization of Honey Can Caps.....329
Ohio Apiaries Cooperative Association...E. R. Root.....330-331
Paton to Retire from Bulk Honey Business.....331
Effect of DDT on Honeybees...Dr. W. E. Dunham.....332-335
Stirring the Witches' Brew...Leon C. Nieb.....335
Taste Ticklers.....Mrs. Benj. Nielsen.....336
Live and Learn...Propolis Pete.....337
Keep Queen Below Excluder the Latter Part of Season...E. S. Miller..338
Beating the Weather, and Shipping Cages...Chas. Mraz.....338
Dry Feeding of Sugar... P. Elcock.....339
Does Backlot Beekeeping Pay?...A. W. Kruse.....339
My Hobby Pays Dividends...Clifton E. Bradley.....340
Keeping Ants out of Hives with DDT...Charles J. Koover.....340
Second Glances...C. M. Isaacson.....341
80 Years Among the Bees...E. R. Root.....342--343
From North, East, West, and South.....344-349
Talks to Beekeepers...M. J. Deyell.....350-351
Editorials.....352-354
Homemaking Chatterbox...Mrs. Harriett M. Grace.....355
Georgia Laws and Regulations.....358-359
Asked and Answered.....356-357
A Means to Prevent Overstocking a Locality...A. Gay.....358
Just News.....360-361
American Honey Institute News Notes.....361

Subscription Rates—United States, Canada, Pan-American countries, and Spain, one year, $1.50; two years for $2.25; three years for $3.00. Single copy, 15 cents. Other countries, 25c per year additional for postage. Discontinuance.—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of address.—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be made by postoffice money order, bank draft, express money order, or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return of manuscript to author if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.

The A. I. Root Company, Publishers, Medina, Ohio.